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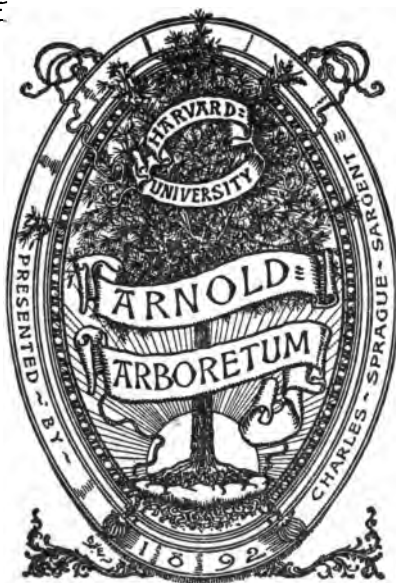
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**THE
AMATEUR GARDENER'S
ROSE BOOK**

ALPINE FLORA

**FOR TOURISTS AND AMATEUR
BOTANISTS**

**With Text descriptive of the most widely distributed
and attractive Alpine Plants.**

By JULIUS HOFFMANN

TRANSLATED BY

E. S. BARTON (Mrs. A. GEPP)

**With 40 Plates containing 250 Coloured Figures
from Water-Colour Sketches by**

HERMANN FRIESE.

8vo, 7s. 6d. net.

**LONGMANS, GREEN, AND CO.
LONDON, NEW YORK, AND BOMBAY**

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THE AMATEUR GARDENER'S ROSE BOOK

BY THE LATE
DR. JULIUS HOFFMANN
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WITH 20 COLOURED PLATES FROM DRAWINGS
BY HERMANN FRIESE AND 16 WOODCUTS

TRANSLATED FROM THE GERMAN BY
JOHN WEATHERS, F.R.H.S., N.R.S.
HORTICULTURAL LECTURER TO THE MIDDLESEX COUNTY COUNCIL
AUTHOR OF "A PRACTICAL GUIDE TO GARDEN PLANTS"
"BEAUTIFUL FLOWERING TREES AND SHRUBS"
"BEAUTIFUL GARDEN PLANTS"
"BEAUTIFUL BULBOUS PLANTS"
ETC.

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1905

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GERMAN PUBLISHER'S PREFACE

As indicated by the title—"THE AMATEUR GARDENER'S ROSE BOOK"—this volume is intended, not so much for professional gardeners and nurserymen, as for the large number of garden lovers who devote special attention to the cultivation of the rose; the object in view being to enlarge their knowledge on this subject, and to produce a book that will serve as a short, practical, and concise adviser.

The author has accordingly set himself the task of dealing in a clear and comprehensive manner with all matters relating to the raising, culture, and general treatment of the rose, which are likely to be of interest to the amateur grower, so that not only shall the beginner be able to obtain profitable advice, but that the experienced rose grower will also from time to time consult the following pages for any information he may require. Unfortunately, the author of this book on roses, Dr. Julius Hoffmann, has been taken from us just at the moment that he was revising the last sheet of his manuscript. His faithful friend, however, Mr. Hermann Ostertag, of Stuttgart, who, for many years past, has shared with him his great love of roses, and assisted him, has brought the work to an admirable finish in a most unselfish manner, for which we take this opportunity of expressing to him our warmest thanks.

The various chapters in the book show an intimate knowledge as to the state of the Soil and its improvement, Manuring, Planting, Pruning in autumn and in

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spring, Bending down Roses and Uncovering them, the choice of Stocks and their treatment, Budding and Grafting, Classification of Roses into groups like Tea Roses, Hybrid Perpetual or Remontant Roses, Climbing Roses, &c., &c. Various operations and methods of cultivation, such as the Raising of seedlings, Propagation by cuttings, Grafting under glass, Pot culture, Production of new varieties, &c., which are of the utmost importance to professional gardeners, but come less under the consideration of the amateur, nevertheless claim attention on account of the keen interest they excite, and are therefore explained and described in a clear and intelligible manner.

The twenty beautifully executed coloured plates add an artistic appearance to the volume, and display a number of characteristic and universally admired kinds of roses. The original paintings were prepared by Mr. Hermann Friese, whose intimate knowledge and care are evident, and he has superintended their reproduction by Mr. E. Hochdanz, at his art works in Stuttgart. Any one, who knows how extremely difficult it is to reproduce exactly the characteristic peculiarities of a rose in a picture, will not withhold his recognition of the high success attained in the coloured plates.

The "Alphabetical List of Roses" will be full of interest to every lover of roses, containing as it does brief descriptions of the most popular kinds in cultivation. They have been selected with great care, and brought together, so that the reader may become acquainted with the most important sorts, which are, indeed, to be found in most catalogues, although not more minutely described.

TRANSLATOR'S PREFACE

IN translating this interesting book on roses, the original has been closely followed all through, so that the author's own views should be placed before the numerous amateur and professional growers of roses in the British Islands.

The subject in all its aspects has, of course, been treated purely from a German gardener's point of view, and with due regard to the more severe winters that prevail in Germany than in our own country.

The English rose grower will therefore be able to note the principal differences between some Continental methods of cultivation and those generally practised in the United Kingdom ; and he may even think it worth while to adopt some of them occasionally. In any case, the British gardener—whether amateur or professional—will lose nothing by laying aside his proverbial insular prejudice to consider the cultural methods of other nations, even if he come to the conclusion eventually that his own are best.

It may perhaps be as well to mention that the "Classification of Roses" adopted in this volume—although simple and sensible—does not altogether coincide with the more elaborate one in use by the English National Rose Society. But the difference is practically of no great moment.

The varieties enumerated at the end of the volume are mostly well known to rosarians on this side of the

Channel. A few are scarcely, or not at all, known ; but the fact that they have been included in the book may be considered a sufficient guarantee that, if they are worthy of cultivation in Germany, with its more rigorous winters, they are more so in our less severe, but more fickle climate.

In order to make the list still more complete and useful, I have added the names and descriptions of several other well-known kinds of roses that are grown in British and Irish gardens either for decorative garden purposes or for exhibition, and amongst them will be found many of the most promising novelties that have been brought to notice within the past year or two. The additions to the original German selection are indicated by an asterisk (*) in front of the name.

Apart from the interesting information to be found in the following pages, the reader can hardly fail to note the great beauty and exactness of the twenty beautiful coloured plates that adorn the volume.

JOHN WEATHERS.

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INTRODUCTION

As far back as the historical traditions of the human race go are to be found information and signs from which it is evident that the rose, even in the dim and distant ages, was recognised as the Queen of Flowers, highly esteemed, and employed on all festive occasions for decorative purposes.

It is supposed to have been introduced from India and Persia (where even to-day beautiful wild roses make their home), and to have continued its triumphal march into the ancient gardens of the Greek and Roman empires, whence it has been distributed over the whole civilised world in the course of centuries.

One may form an approximate idea of the important part which the love of roses, the raising of roses, and the trade in roses play to-day, when one considers the following published statistics :—

The rose plants which come into commerce every year from the neighbourhood of Paris may be estimated at least at about 300,000 standard trees and 1,200,000 dwarf, budded roses. Each year the supply of rose plants raised in Lyons comes to about one million. In the neighbourhood of Brie-Comte-Robert (in the Department of the Seine-et-Marne) about a hundred growers raise more than two and a half millions of roses annually. On the Riviera, in the districts of Antibes, Cannes, and Golf Juan, increasing tracts of land several acres in

extent are cultivated almost exclusively for the production of cut roses, which, during the winter months, are sent to France, Germany, England, &c., and find a ready sale.

As the raising of roses, and the trade in them, during the past ten years, have also assumed large dimensions in Germany, where several well-known nurserymen cultivate them on a large scale, the number of plants which are raised in that country from year to year becomes ever greater and more important. The supply has kept pace with the steady demand, the growth of which has been due to the increasing number of lovers of roses, and to the almost universal employment of roses for presents, dedications, memorials, table decorations, besides which they are used for decorative purposes on all kinds of festive occasions and holidays.

We find beautiful roses in all kinds of places—at railway stations, in ball-rooms, in the busy streets of great cities, in the windows of florists' shops, &c.

The increasing favour in which the rose is held is due not only to the prevailing fashion and taste, but perhaps more especially to the great variety of uses for which it is adapted, its beautiful and ever-changing forms, its unsurpassed shades of magnificent colour in all gradations, from white to golden yellow, pink to scarlet and crimson, not to mention the delicious fragrance. In addition, we may mention the manifold ways in which it is employed in gardens. In the form of standards, pyramids, bushes, or climbers, it is used in a variety of ways. Sometimes it is used as an edging plant for beds; sometimes for decoration of pathways and borders, or for the screening of roofs, walls, summer-houses, verandahs, as well as for the making of festoons and living arches; or, again, for making

beautifully-coloured groups on lawns, or in cemeteries, or for thick hedges, &c.

For, not only does the rose embellish the beds in noble parks, highly cultivated demesnes, suburban and public gardens, but also almost every cottage garden, indeed, every front garden; and it even flourishes as a pot plant in the windows or flower-stands of innumerable admirers who are unable to secure a piece of suitable ground or soil for its culture.

It is easy to understand that a certain amount of knowledge is necessary to enable one to properly raise and cultivate roses, and to distinguish their different kinds, peculiarities, and requirements. As a rule such extensive and thorough knowledge is only to be met with in specially trained professional gardeners and practical rose growers. Most amateurs have neither time nor opportunity to take an active part in the propagation and raising of the different forms of roses under glass, such as those budded low down, or on their own roots, &c. They will therefore find it better to consult a trustworthy nurseryman as to their requirements, not only because he produces large quantities, but also retails them at a moderate price.

The wants of such amateur gardeners who confine themselves to the cultivation and pruning of roses in the open air, and who like to bud their own wild stocks, are therefore considered to be of primary importance in this book on roses.

It is evident that such amateurs will be anxious to become sufficiently acquainted with other gardening operations, such as the planting, wintering, covering up, &c., of roses, so that they may be better able to arrange and supervise the work relating to them at the right time.

These operations, therefore, are described in some detail, and explained in such simple and intelligible language that any amateur who takes the trouble to read carefully the chapters devoted to them may easily master the fundamental principles of rose growing for himself.

The copious index to be found at the end of the volume will enable the reader to turn to any special information he may seek without any loss of time.

PART I
CLASSIFICATION OF ROSES

THE AMATEUR GARDENER'S ROSE BOOK

PART I CLASSIFICATION OF ROSES

THE large number of different kinds of roses grown in our gardens has necessitated their division into groups, so that we might be able to gain a greater knowledge of them, and the uses for which they are best adapted.

As these groups—not always clearly defined—serve as a basis for the numbering of the different varieties and hybrids in many garden catalogues, we give below a short description of them, which we trust will be welcomed as a practical guide by the beginner in rose growing.

The following groups, with the leading characteristics of their sorts, form a compact collection of choice and universally admired roses, in the purchase of which the amateur can hardly make a mistake. At the end of the book is given in detail an "Alphabetical List" of the most recommendable Roses.

ANNUAL FLOWERING OR SUMMER ROSES

1. European Wild Roses.—These have single, that is to say, not "double" flowers, and are typified in the common Hedge, Briar, or Dog Rose (*Rosa canina*, L.), which is so extensively used as a stock for budding the

choicer varieties of roses. The Sweet Briar (*Rosa rubiginosa*, L.), the Scotch Rose or Burnet (*R. pimpinellifolia*, DC.), *R. cinnamomea*, L., and *R. villosa*, L. (or *R. pomifera*, Herrm.), also belong to this group. The large fruits or "hips" of *R. pomifera* are known as "Rose Apples," and are appreciated by many as a preserve.

2. Austrian Briars (Capuchin, Fox, or Bug Roses).—These are derived from *Rosa lutea*, L., and have the flowers mostly single, not double. They grow three to five feet high, have very prickly stems, small dark shining green leaves, and yellow or orange-scarlet blossoms. To this group belong *R. punicea*, Mill. (which has glowing orange-scarlet flowers, the outer surface of which is pale yellow); the *Persian Yellow* (with double golden-yellow flowers); and *Soleil d'Or*, a novelty which appeared in 1902.

3. Provence Roses¹ (Vinegar Rose, Apothecary's Rose, Striped Rose).—These are descended from *Rosa gallica*, L. (*R. versicolor*), and were formerly much esteemed on account of their hardiness and their likeness to "Cabbage" or Centifolia Roses. The flowers are double or semi-double, very fragrant, and are chiefly remarkable for the richness of their colours, such as white, rosa, magenta, and grey; they may be also distinguished as striped, spotted, or marbled. The upper surface of the leaves is cool green, the under surface being blue-green (or glaucous), and often covered with a white pubescence. To this group belong: *Belle des Jardins*, *Œillet flamand*, *Tricolore de Flandre*.

4. Damask Roses (*Rosa damascena*, L.).—These are compact bushes, growing about five feet high, and are natives of Syria. The sweet-scented flowers vary in colour from white to rosy-red, and are more or less

¹ Provence, not Province. The name Provence is derived from a village near Paris, which became famous as a rose-growing district.



Rosa canina.

double, with finely divided and reflexed calyx-lobes. Comparatively few kinds are now grown in gardens, chiefly on lawns. To this group belong: *Madame Hardy*, *Œillet parfait*, and *Rosa damascena triginitipetala*, Dieck, the last-named kind being the most important in the East, where it is grown for the production of attar, or otto of roses.

5. Climbing, Twining, or Trailing Roses.—These are strong-growing kinds that have been introduced from North America and Asia, but unfortunately they are not all quite hardy. They are very free-flowering, the blossoms being double or semi-double, white, rose, or red in colour, and of medium size. They are much appreciated for covering walls, verandahs, &c., while many fine kinds are well adapted to form “weeping” roses when budded on the top of a tall stem. In this group we find: *Madame Sancy de Parabère* (particularly hardy), *Belle de Baltimore*, *Crimson Rambler*, and also the Wichuraiana Roses, *Beauty of the Prairies*, and the “Three Graces”—*Aglaiia* (greenish yellow), *Euphrosyne* (pink), and *Thalia* (white).

6. Japanese Roses (*Rosa rugosa*).—These hardy bushes grow six to nine feet high, and are well adapted for forming hedges, or for isolated groups in the garden. They are readily distinguished by their handsome deep-green leaves, single or semi-double white, red, or crimson flowers; and by the profusion of beautiful orange-red or crimson fruits which they bear in autumn, and which are much appreciated as a preserve by many. They usually flower but once a year, although some kinds continue to blossom until the autumn, after the first period of blooming is over. In this group we find *rubra simplex*, *atropurpurea*, *Coubert's Double White*, and *Madame Georges Bruant*, &c.

SUMMER AND AUTUMN FLOWERING ROSES

This second group embraces the innumerable kinds of different budded or grafted roses which are now cultivated—either as “standard” or “bush” roses—for the decoration of our gardens. In this group we may specially distinguish as types the so-called “Tea” Roses, the “Cabbage” or “Centifolia” Roses, and the “Moss” Roses. Most of the others have been mixed in such a variety of ways by crossing and hybridisation amongst each other, that it has become more difficult than ever to place any particular variety into this or that group with any degree of certainty. However, it is practically necessary to maintain a clear distinction between the most important groups, and we have therefore adopted the classification that is now almost universal in most garden catalogues, without being too particular on the point. We divide the florists’ roses accordingly into the following groups:—

7. Cabbage or Centifolia Roses (*Rosa centifolia*, L.).—These are natives of the East, and were formerly highly esteemed in our gardens. In their own country they are utilised, like the Damask Roses, for the production of otto of roses. They are distinguished by the beautiful globular shape of their many-petalled flowers, and by the delicious fragrance they exhale. They are mostly hardy, and are grown as bushes on their own roots. *Rosa centifolia communis* represents this group.

8. Moss Roses (*Rosa centifolia muscosa*).—These are closely related to the preceding, and are distinguished by having the calyx and its segments adorned with a moss-like covering of strongly scented glandular hairs. *R. centifolia muscosa communis*, *cristata*, *Reine Blanche*,

SUMMER AND AUTUMN FLOWERING ROSES 7

Little Gem, *Blanche Moreau*, *Soupert et Notting*, &c., belong to this group.

9. Hybrid Perpetual or Remontant Roses.—It is scarcely possible to distinguish the extensive group known under the name of Hybrid Perpetual or Remontant Roses¹ by any common or well-defined characteristics, for it embraces the great majority of all the florists' varieties, having fully double white, red, carmine, and magenta-coloured flowers. For decades they have been raised through crossing one with another, and innumerable varieties—some scarcely distinguishable from others—have been introduced into commerce as distinct kinds or novelties.

To this group belong: *Général Jacqueminot*, *Alfred Colomb*, *Gloire de Bourg la Reine*, *Fisher Holmes*, *Madame Victor Verdier*, *Souvenir de Spa*, *Marie Baumann*, *Louis van Houtte*, *Baron de Bonstetten*, *Princesse de Béarn*, and *Alsace-Lorraine*—all with brilliant deep crimson or carmine flowers; *Mrs. John Laing*, *Oscar Cordel*, *Victor Verdier*, *Jules Margottin*, and *John Hopper*, with rosy-pink flowers; *Baroness Rothschild*, *Mdlle. Eugénie Verdier*, *Her Majesty*, *Pride of Waltham*, with pale pink flowers; *Gloire Lyonnaise*,² with creamy white or pale yellow blooms; *Captain Christy* and *Catherine Soupert*, with delicate flesh-coloured flowers; and *Merveille de Lyon*, *Frau Karl Druschki*, *Elisa Boëlle*, and *Mabel Morrison*, with white flowers.

10. Bourbon Roses (*Rosa indica bourbonica*). This group is intermediate between the Tea Roses and Monthly Roses—resembling the last named more closely perhaps. The kinds belonging to it are fairly hardy, and make moderate growth, but flower almost uninterruptedly until the autumn. The flowers are of medium

¹ Many of these continue to bloom throughout the season, but others only sparingly so.

² Classed as a "Hybrid Tea" in England.—J. W.

size, slightly fragrant, beautifully cup-shaped, and display light, delicate, and finely-shaded colours. *Souvenir de la Malmaison*, *Mrs. Bosanquet*, *Reine des Îles de Bourbon*, *Louise Odier*, *Madame Pierre Oger*, &c., belong to this group.

II. Tea Roses (*Rosa indica fragrans*).—This large group embraces a large number of our most beautiful garden roses, the flowers of which are distinguished by having a sweetly tea-scented fragrance. The plants flower usually in summer and again in autumn. The leaves are deep green and shining, and in the young state are brownish or purple-red. The growth of many kinds is only moderately vigorous; but in others, like *Maréchal Niel*, *Gloire de Dijon*, and related kinds, it is very strong. The flowers are medium in size to very large, and are very variable in form—being tulip-like, cup-like, saucer-shaped, sometimes very full, and sometimes only semi-double and loose. The colouring of the flowers of Tea Roses exhibits the greatest variation of shades, from white to citron-yellow, golden-yellow, copper-red, pink, crimson, &c. Generally speaking, the Tea Roses are sensitive to severe cold, and should therefore receive some little protection in winter. The following are typical varieties: *Niphetos*, *Sombreuil*, *The Bride*, *Souvenir de Paul Neyron*, with white and yellowish-white flowers, except the last named, which has a pink centre; *Maréchal Niel*, *Belle Lyonnaise*, *Enfant de Lyon*, *Isabella Sprunt*, *Madame Chédane Guinoisseau*, *Madame Eugène Verdier*, *Madame Hoste*, *Marie van Houtte*, *Perle des Jardins*, *Sunset*, *Madame Margottin*, *Madame Honoré Defrésne*, with bright and deep yellow flowers, partly shaded with pink and red; *Gloire de Dijon*, *Adrienne Christophle*, *Francisca Kruger*, *Madame Bérard*, *Madame Welche*, *Safrano*, *Madame Falcot*, *Beauté de l'Europe*, and *Stephanie et Rudolphe*, with salmon-yellow flowers, shaded with copper-red; *Catherine Mermet*, *Souvenir*

SUMMER AND AUTUMN FLOWERING ROSES 9

d'un Ami, Baronne Henriette de Löw, Maman Cochet, Socrates, Comtesse Riza du Parc, Grace Darling, Homère, Madame Jules Margottin, Souvenir de Victor Hugo, Archiduchesse Marie immaculata, having bright pink or flesh-coloured flowers shaded with other tints; *André Schwartz, Papa Gontier, Madame Lambard, Souvenir de Thérèse Levet, Comtesse de Casserta, Christine de Noué, Duchess of Edinburgh, Princesse de Sagan*, with red flowers.

12. Hybrid Tea Roses (*Rosa indica hybrida*).—This group embraces those kinds which have been produced by crossing the Tea Roses with the Hybrid Perpetuals. Hence numerous roses of all sections belong to it, which, in addition to their shape and colour, possess the merit of being less sensitive to the cold than many Tea Roses are, and grow more sturdily, and flower with shorter intermission until the autumn. Their close relationship to the Tea Roses is noticeable from their shining green leaves, and from the usual brownish-red colouring of the young growths. To this group belong the white *Kaiserin Augusta Victoria*, the pink, rose-red, chinese-red, and cherry-red *Augustine Guinoisseau, Souvenir de Président Carnot, Lady Mary Fitzwilliam, Duchess of Connaught, La France, Madame Caroline Testout, Belle Siebrecht* (Mrs. W. J. Grant), *Camoëns, Madame Jules Grolez, Reine Marie Henriette*, &c.

13. Noisette Roses (*Rosa noisettiana*).—This group is also closely related to the Tea Roses, but is usually characterised by a stronger and more climbing habit of growth. The plants, which are fairly hardy, flower freely in clusters or umbels, and should not be severely pruned. As a rule the blooms are medium in size, semi-double, or very full, and varying from white to bright golden yellow in colour. Such kinds as *Lamarque, Aimé Vibert, Boule de Neige, Ophirie, William Allen Richardson, Bouquet d'Or, Solfaterre, Madame Pierre Cochet*, &c., may be taken as representatives of this group.

14. Small Flowered or Polyantha Roses (*Rosa polyantha*).—These are dwarf free-flowering kinds of moderate growth, with light-coloured flowers—white, pink, yellow—borne in clusters or umbels at the tips of the shoots. These charming roses are not sufficiently well known. They are particularly suitable for small gardens, and may be used as a bordering to beds and groups, and also look well budded on the top of tall stems. Many kinds flower almost without cessation during the whole of the summer months, especially if those branches that have blossomed have been afterwards cut hard back. In this group we find *Paquerette*, *Clothilde Soupert*, *Anne Marie de Montravel*, *Perle des Rouges*, *Perle d'Or*, *Mignonette*, *Gloire des Polyanthas*, &c.

15. Monthly or Bengal Roses¹ (*Rosa indica semperflorens* or *Rosa bengalensis*).—The progeny of this rose, which was introduced from Asia to England at the end of the eighteenth century, have long been amongst the most widely cultivated of garden roses. They are distinguished by their rather small buttercup-like flowers of pink or deep red, their loose habit, and deep green shining leaves, their moderate growth, and free and continuous blooming. As bushes on their own roots they are particularly suitable for making dwarf groups or for borderings, but they also look handsome when grown as standards. To this group belong: *Ducher*, *Hermosa*, *Cramoisi*, *Général Labutère*, *Gruss an Teplitz* (a hybrid Bengal Rose), *Mdlle. Laurette de Messimy*, &c.

¹ Also well known in the British Islands as "China Roses."—J. W.



Rosa
muscosa.

PART II

THE RAISING AND CULTURE OF ROSES IN THE OPEN AIR

CHAPTER I

NATIVE COUNTRY—CLIMATE—POSITION—KINDS OF SOIL—MANURING

NATIVE COUNTRY.

WITH few exceptions, the great family of wild roses, from which all our cultivated varieties have been developed, is spread over the northern hemisphere, between the 20th and 70th parallels of latitude. It is absent from the Tropics, and has its most numerous representatives in the warmer temperate regions between the 20th and 50th parallels of latitude. Of all the wild roses at present known, 40 per cent. are plentiful in Asia, about 30 per cent. in Europe, about 20 per cent. in America, while 3 per cent. are indigenous to Northern Africa.

CLIMATE.

Of our European wild roses there is one species, the Alpine or Rock Rose (*Rosa alpina*, L.), which is found on high mountains up to an altitude of 6500 feet; and another, the Burnet or Scotch Rose (*R. spinosissima* or *R. pimpinellifolia*), is even yet found growing wild in Iceland. But these hardy kinds, although little susceptible to low temperatures, have played no part as progenitors of our cultivated roses. On the contrary, as we have seen, those wild roses which have served as the forefathers of most of our garden roses are natives

of much warmer climates. In their native habitats—India, Persia, Turkestan, Asia Minor, &c., much milder mean annual temperatures prevail than in Germany (or the British Islands). It is therefore easy to understand, that the cultivated progeny of such kinds can only be considered as having become artificially naturalised with us. Indeed, during the warm summer months of the year they are quite at home in the open air. At other periods, however, they exhibit their tender peculiarities, especially during the severe winter months, when they cannot survive unless protected with some sort of covering.

There is also quite a goodly number of warmth-loving garden roses which still flourish in the open air in the south of France, Spain and Italy, indeed, even in Holland, in the west of Belgium, and on the western coasts of England and Ireland, without any protection whatever, while the same kinds in Germany and more northern latitudes only linger and perish in spite of careful protection in winter. There is also a number of particularly tender roses known which play a very important part, from a floral point of view, when forced for cut roses in the greenhouse, but which, on the other hand, are seldom—and indeed only when they can be particularly well protected in winter—grown in the open air as standards. We shall again refer more in detail to these particularly tender roses (such as *Niphetos*, *Lamarque*, &c.) in the chapter on the “Winter Protection of Roses.”

POSITION.

The majority of all purchased standard and bush roses are budded on the common hardy wild Briar or Dog Rose (*Rosa canina*), in consequence of which they are fairly modest in regard to position and aspect. In order, however, to secure a more vigorous development,

freer growth, and a greater abundance of blossom, all garden roses nevertheless prefer an open, sunny, situation rather than a shady one. Roses cannot flourish in the shade of bushes and large trees, or between high buildings in gloomy squares to which a ray of sunshine rarely penetrates; nor in the centre of large towns in which the atmosphere at times is so overlaid with smoke that the plants can scarcely develop any sturdy growth whatever. Pure air and a few hours of sunshine every day are indispensable. The sunshine in the morning and afternoon is particularly beneficial to roses during the flowering period. Many hardy kinds are benefited even by the glaring mid-day sun, but many of the deep red kinds cannot bear it, and lose their brilliancy when scarcely fully developed, because, in gardeners' language, they get "scorched." For many of the thin or poorly filled Noisettes and Tea Roses, which are usually at their best in the morning when only half open, the glaring sunshine is unfavourable, inasmuch as it induces them to open too quickly, after which they soon fade. Indeed, many climbing or trailing roses flourish best on shady walls with a northern aspect where there is practically little sunshine, and in June and July are covered with roses, although they do not continue to develop them freely in the autumn.

Next to the position, the climate and the particular locality naturally have to be taken into consideration, as already stated, so that the different kinds of roses may have a chance to flourish. Whilst it is true that many Tea Roses and Hybrid Perpetuals, for example, are quite unsuitable for bleak places or high altitudes, yet the Scotch Rose (*R. pimpinellifolia*), the Austrian Briars (or Capuchin Roses), several Provence Roses (forms of *Rosa gallica*), and even the Cabbage or Centifolia Roses flourish in such places in the open air, if only a slight protection be given them in winter.

So far as planting roses in bleak localities is concerned, it is better to consult older gardening friends, whose experience and advice may be available, as to the kinds that are likely to grow best in their particular neighbourhood. Should it, however, be a question of new experiment in an inclement spot, especially one in which roses have never been grown before, then the following kinds may be recommended on account of their particular hardiness:—

1. **Hybrid Perpetuals:** Général Jacqueminot, Marie Baumann, Fisher Holmes, Jean Liabaud, Jean Soupert, Jules Margottin, Eugène Fürst.

2. **Tea Roses:** Gloire de Dijon, Belle Lyonnaise, Madame Bérard, Sombreuil.

Nevertheless it is always advisable to provide good winter protection, especially in bleak localities.

KINDS OF SOIL AND THEIR IMPROVEMENT.

Generally speaking, roses cannot be regarded as fastidious plants, so far as the soil is concerned, as they grow in almost any ground. They flourish best, however, in a light loamy garden soil, with which sand may be freely mixed, provided it is not made too arid. On the other hand, roses dislike a wet or heavy soil, or one that is tenacious or clayey.

Almost every soil has its own peculiarities according to the different chemical arrangements of its particles. In most cases, however, it is within the power of the gardener to effect an improvement in it. In the event of such being necessary, the ground should be dug up to a depth of about two feet, the upturned soil being mixed with more suitable materials, and again dug into the trenches. If it is proposed to plant in spring, however, such drastic measures should be undertaken during the previous autumn, so that the soil may be improved in



*Mistress
Bosanquet.*

the meantime by the mellowing action of the winter frosts, and also have had time to settle down.

A purely sandy soil will be greatly improved by the addition of large quantities of heavier soils, such as chalk, loam, and marl, as well as by composts or stable manure. Copious waterings—especially in times of great drought—must not be neglected when dealing with soils that are chiefly of a sandy nature.

A good loamy soil, and also one that is inclined to be heavy, or without chalk or marl, will be made looser and more porous by the admixture of sand and horse-droppings, and the addition of chalk and composts is also to be highly recommended.

A loamy soil by itself is also very suitable for the planting of roses; but the addition of chalk and manure enhances its fertility.

A tenacious or clayey soil, owing to the stagnant water it contains, is, as already observed, the most unfavourable, and cannot be improved merely by the admixture of lighter kinds of soil. It should therefore be taken out to a depth of eighteen inches or two feet, and replaced with a mixture of good loam, sand, chalk, and compost.

MANURING ROSES.

It is an established fact, and one well worth remembering, that roses cannot flourish for ever, even in the best of soils, with only an occasional manuring. They absorb a good deal of nourishment, and this must be replenished to replace what has been taken away by the shoots and leaves that are sacrificed every year at pruning time. The exhausting effects of the roots of roses is clearly indicated from the fact, confirmed by old professional gardeners, that good rose soils, if cropped only with roses for several years, eventually become so rose-sick that they are practically useless

for further rose growing, even when liberally dressed with manure.

In private gardens, where roses are farther apart, and planted in good soil in which they obviously flourish, a dressing of night-soil is usually given in late autumn or early winter. In most cases, indeed, where the heads and bent-down stems are covered with the adjacent upturned soil, the holes—about four to six inches deep, which have been made for the purpose—are filled with the manure. During the winter months, rain and snow soak into it, and thus gradually convey the manurial foods to the roots of the roses. In the holes mentioned, various other kinds of manure may be placed with excellent results, such materials, for example, as good composts, cow-manure, horn-shavings, malt (or kiln) dust, wood ashes, the clearings from dovecotes well mixed with earth, &c.

In the spring time, up till about June, one may also give a top-dressing of manure, the ground being loosened beforehand, carefully avoiding injury to the roots of the roses, and the ground may then be sprinkled with soil and guano, or some other concentrated manures mixed together. It is also an excellent practice to place upon the soil a layer of short well-decomposed stable manure with which some peaty soil may be mixed. This last manure is slow and lasting in action, but possesses at the same time the advantage of keeping the soil moist, that is, it prevents it drying up too rapidly.

One of the best methods of manuring during the spring months consists in repeated waterings with liquid manure. So as to have a supply of this always at hand, a tub or cemented water-tight tank is necessary. This should be filled with water, and from time to time manure from cows, sheep, dovecotes, horses, or guano or horn-dust may be mixed with it. Liquid manure prepared in this way should be frequently stirred up,

and should not contain too great a quantity of the manures in solution, but only sufficient to make a pale-coloured, and, above all, a thin-flowing liquid.

As there is, as a rule, many opportunities for the employment of a good heap of compost in large gardens, it is recommended—especially if it cannot be purchased cheaply in the neighbourhood—that such a compost-heap should be formed in a remote part of the garden. At least two years should elapse from the time the compost-heap is made until it becomes fit for use. Then, however, such a heap—although composed of almost inexpensive materials, and at an insignificant cost of labour—pays richly for the time and trouble spent upon it.

To make such a compost-heap, one proceeds somewhat as follows : Having chosen the most suitable site, a foundation is first of all made up with a layer, about twelve to eighteen inches thick, of good garden soil. This is best done in spring. On this foundation, in the course of the year, all suitable garden refuse, such as the herbaceous stems and twigs of plants, the remains of vegetables, weeds hoed up from the beds or pathways, fallen leaves, decayed fruit, &c., may be thrown. The rapid decomposition of all this waste material, as well as the destruction of the seeds of weeds, and the larvae, &c., of injurious pests that usually accompany them, will be considerably accelerated if a layer of slaked lime, about two inches thick, is spread over it from time to time. At the end of the first autumn the heap should be covered again with a layer of garden soil, and freely watered with urine, slops from the kitchen or stables, and such like materials. If one has the opportunity to collect the fallen leaves from the woods into a large heap, a particularly agreeable and good dark compost is thus obtained. Such leaves, however, should also be covered with soil, so as to prevent them from being

blown about by the wind. In the following spring the heap of compost should be chopped down to the ground with the spade so as to ensure better mixing, and to accelerate the decomposition of the different layers.

By proceeding in this way, and laying down a heap every spring, a useful compost will be produced at the end of the second year, and this, when passed through a wire sieve, may be employed in the future for the improvement of the soil. According to requirements, one should make in the same way a second heap of compost, and even a third and a fourth heap in large gardens, so as to provide in advance material for future use.

CHAPTER II

PLANTING ROSES

AMATEURS who desire to lay out a new pleasure-garden according to their own taste, will always do well to consider how soon they may be able to enjoy a beautiful display of roses. In this case it will be necessary to acquire the necessary standards and bush roses by purchase. In regard to the choice of sorts, be they at first only a few, or be they many, the lover of roses will find good advice on the matter in the chapter dealing with the "Classification of Roses" (p. 3), and also in the "Alphabetical List" of the different kinds of Roses, &c.

SPRING AND AUTUMN PLANTING.

In the first place we will consider a little more clearly the oft-repeated question, "When should the desired roses (either standards or bushes) be procured and planted?" The opinions of professional gardeners have always been at variance in the past, and will no doubt be so in the future also. The majority favour planting in the autumn, while others say that spring is the best time. Each of the two periods has its advantages and disadvantages, and it has been proved that roses may be successfully planted in either autumn or spring according to time and circumstances.

The advantage of planting in autumn lies in the fact that the roses can be procured at the best time—about the end of October—when the soil is still open and

easy to work. The plants can therefore be planted in the places appointed for them in holes from nine to twelve inches deep, and be bent down to the ground in very bleak localities. The leaves are removed from the heads of the plants, the latter being covered over with about eight inches of soil as a protection against the winter frosts. Later on branches of firs or other material are placed on the recumbent stems and heads for protection, so as to ensure the certainty of the plants passing through the winter without injury. The fact that roses planted in the autumn develop new root-fibres — especially in mild weather — to carry them through the winter, is not to be undervalued. Under favourable conditions such roses exhibit a marked lead and earlier and stronger growths than those planted the following spring. Should a sharp and persistent frost set in early in autumn, little advance will be made with the development of delicate root-fibres. In such an event, it will be advisable to cover the stems to a depth of six to eight inches with dry leaves, peat fibre, or litter, so as to prevent the frost from penetrating into the lower layers of the soil. It is also an advantage to secure plants in the autumn, because early in the season the rose nurseries are well stocked with desirable sorts, and orders are more likely to be executed on the spot than in the spring, when the rose quarters have been ransacked and depleted.

When planting in spring one will usually have to consider (1) whether the soil intended for the roses requires to be improved (see p. 16), and opportunity should be taken to have it dug up before the winter, so that it may be well exposed to the action of the frost till spring; (2) whether one is only to make a beginning for the first time in spring, such, for example, as wishing to plant roses in a recently acquired garden; (3) or whether the soil in the place is inclined to be wet or



*Souvenir
de la Malmaison.*

MAISON DE LA MALMAISON

cold, so that tender kinds, such as delicate Tea Roses, are likely to suffer readily in the following winter as a result of being transplanted.

According to the earliness or lateness of the season, spring planting is generally done in Germany in April, and then the standards are fastened to a strong stake close to the head by means of a willow twig or with a twisted round the stake and stem in the form of a horizontal figure ∞ .

The greatest danger that threatens standard roses planted in spring is the shrivelling up caused by the warm air and drying winds. To prevent this shrivelling up, the soil should be copiously watered in dry weather; in addition to which the entire length of stem may be enveloped in moss, which can be maintained in a moist condition by frequent syringings. If the roots and stems are healthy, the shrivelling up can be counteracted in this way with certain success. If, on the contrary, these precautionary measures are neglected, then a large percentage of newly planted rose trees will certainly succumb in dry spring seasons.

TREATMENT OF ROSES OBTAINED FROM A DISTANCE.

If one has the opportunity to secure his roses in his own neighbourhood, he should stipulate for the delivery of his order for autumn planting about the end of October, and for spring planting at the beginning of April. If one should, on the other hand, order his plants from a distance, late in autumn, it may easily happen that the consignment is frozen on the journey in frosty weather. In such a case the plants on arrival should be kept in a place free from frost—but not in warmth—until the roots, and the moss surrounding them, are gradually thawed out. When this has taken place, the roses should be unpacked and placed in a

protected spot, that is to say, they should be well covered with soil so that they may be protected against the further effects of frost. The planting in the open air may then be deferred without disadvantage until the soil itself has become free from frost. The same precautions are obviously advisable if, on the arrival of the plants in the spring, the immediate planting in the open air is prevented by unexpectedly late frosts.

It may also happen that roses ordered from a distance in the spring—if a long time on the journey in warm weather—may arrive in a very dried-up condition, rendered noticeable from the shrivelled appearance of the bark. If such roses were to be planted in the open air immediately on arrival, it would be only with great difficulty that they would grow at all. They should therefore be placed in water for one or two days, and after that buried in a trench for about a week, and covered with a layer of moist soil about a foot thick. If the parching up has not already gone too far, plants that one would have given up for dead will often recover under this treatment in a most astonishing manner.

PRUNING ROSES AT PLANTING TIME.

The purchaser of young rose trees should attach some importance to those plants that show a well-developed head with many shoots; and not without reason, indeed, as a fine head is a proof that the plants are healthy and have been sturdily grown. It is even still more important that the base of the plants—that is the root-region—should be in a good condition, and furnished with numerous healthy roots and rootlets for the future good growth and prosperity of the plants. When this is the case, one may hope to have a regular head formed, with only two or three shoots for the

development of sturdy growth. On the other hand, those wretched plants with miserable roots, and still more miserable heads, which one sometimes receives (because better specimens of the desired sorts are not to be obtained at the time from the nursery) are hopeless, and not worth the trouble of planting. The sanguine hopes as to the gradual increase in vigour of such weaklings almost always remain unfulfilled, and after a few years of labour and love have been spent upon them they are certain to die—an experience which any lover of roses would be spared.

When planting in autumn it is unnecessary to prune the heads of the plants; the removal of most of the leaves and sappy unripe shoots will be sufficient. The more important operation of proper pruning, on the other hand, is left over till the following spring. In this connection most beginners go to work too timidly, in the belief that it is essential to retain all healthy shoots, whether strong or weak. Such belief, however, is quite erroneous, for, as a matter of fact, it is only necessary to retain a few of the most sturdy branches, say three to seven, and even these may be cut back to two or four "eyes" or buds. These few growths, in which the flow of sap is concentrated in the spring, become a much stronger framework for the formation of a good head a few weeks after pruning, than if they had to share their nourishment with numerous twigs and shoots. All weak shoots are therefore to be entirely removed—either by means of the pruning-scissors (*secateur*) or pruning-knife—at the point from which they spring.

While the heads of the rose trees are to be well cut back or thinned out in the spring, the roots, on the other hand, require but little cutting at the time of planting. It would be quite wrong to cut the roots hard back. Whatever is healthy in the masses of root-fibres should be spared and retained, as even the tiniest roots are of

very great importance for the growth and nourishment of the planted rose tree. One should also carefully avoid exposing the roots, even for a short time, to the open air, either before or after being trimmed up, so as to prevent them from being dried up. Fibrous roots develop as the result of quick working and well-regulated labour, and thus contribute very much to the good growth of the plants at the same time.

LIFTING AND REPLANTING ROSES.

The lifting of roses need only be taken into consideration by the amateur gardener who possesses a rose garden in which the stocks budded by himself have increased so much in size and vigour that it becomes necessary to transplant them. This operation is begun by digging out a spadeful of soil, about nine inches away from the centre, all round the stem, so that the latter, with its roots, may be easily lifted up. Should there be any strong woody roots left behind, they must be cut away with a strong knife, leaving the smooth flat cut on the under side. The holes prepared for the reception of roses should be about sixteen to twenty inches wide and about twelve inches deep, according to the circumference of the root-stock; this is sufficient in good garden soils. On the other hand, in uncultivated ground, such as on turf or on poor soil, holes about forty inches wide and twenty-four inches deep should be dug out, the removed soil being replaced for the most part with good garden mould. Should the subsoil be wet and non-porous, it is then also advisable to place in the bottom of the hole, to a depth of about eight inches, a layer of drainage material, such as broken brick-bats, builders' rubbish, pieces of charcoal, &c.

When planting, it is necessary to see that the plants are not put in deeper than they were before. On the

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contrary, they should be somewhat higher up, as it should be taken into account that both the plants and the soil around them will gradually settle down a little afterwards. The roots themselves should be carefully spread out, not curled up, and good light soil should be worked in between them and made firm. Finally, the hole should be filled up with rich soil, rather above the level, as the settling down of the soil later on must also be taken into account during this operation. If the soil is in a thoroughly moist condition at planting time, it will be unnecessary to give it an immediate watering. In the event, however, of persistently dry weather prevailing after planting, such as not infrequently happens in spring, it is then advisable to give the soil a good soaking. Under all circumstances, however, it is a good practice to spread a thin layer of stable manure over the soil at the base of the newly planted roses. This serves the double purpose of preventing the soil from being dried up in hot weather, and of supplying soluble nourishment to the roots in rainy weather.

TRANSPLANTING ROSES IN THE OPEN AIR IN SUMMER.

It is always a dangerous experiment to transplant roses in the open air during the summer months. It often succeeds, however, if one proceeds with the necessary carefulness, and, in addition, is favoured with suitable weather. Of course one can scarcely expect that the plants, being rudely interrupted in the midst of their greatest activity, will be able to make the best of growth, or in other words to grow well and come into blossom under such adverse circumstances.

As stated before, the transplanting must be carried out with prudence. At the same time the leaves and weak shoots should be also removed from the head. The stems should be wrapped in moss, which can be

kept moist with frequent waterings, while the soil should also be freely moistened. Under favourable circumstances, young shoots will soon develop, and sometimes bear blossoms in the following autumn. With the exception of pot roses, one is not very likely to decide upon the planting of roses during the summer months, unless one is compelled to do so under special circumstances, such as being obliged to clear land occupied by roses. In such a case it is indeed worth while to try the experiment of keeping the roses alive by means of transplanting.

PLANTING OUT POT ROSES IN THE OPEN AIR.

This operation deals almost entirely with dwarf or bush roses. It is extremely simple, and likely to be successful if those varieties are selected which are usually grown in large pots for market purposes for the supply of table decorations, show-windows, &c. Such old and well-rooted examples are, however, rather too high in price to induce the amateur to purchase them in large numbers. The number of varieties grown for market are also comparatively few.

Amateurs, therefore, who attach importance to a larger selection of well-recommended novelties, are always advised to have their wants attended to by approved rose nurserymen. Owing to the moderate charges, they will thus be able to order, not only standard roses, but also dwarf ones in pots, in the required sorts; later on they may propagate those that are considered worthy, by budding on wild stocks. The author has adopted this method for ten years, and can highly recommend it to all beginners.

Most of the dwarf roses in commerce referred to in the horticultural catalogues, have been raised under glass, that is to say, those intended for budding on Briar



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stocks (*Rosa canina*)—not on their own roots—have been taken into the greenhouses, and wintered under glass, hot beds, or cold frames. They should therefore not be planted out in the open air too early in spring—say, not before the middle of April or beginning of May according to the state of the weather. It must be borne in mind that the gardener must harden them off for the open air in advance, so that there should be practically nothing to fear from any severe night frosts.

It is a drawback with many of these dwarf roses grown in pots that they quite fill up the space allotted them with their thick masses of roots. If planted in the open air in only a corresponding depth and circumference of soil, the growth in their new position will be hampered, owing to the outer rootlets being so confined that they are unable to develop further for a long time, or only produce weak growths, even if they do not altogether die away. It is therefore absolutely necessary to make the holes somewhat larger than required. The outer rootlets should also be removed with a sharp knife, and the soil enclosed in the centre by the stronger roots should be loosened and pricked out with a pointed stick. Some good rich soil is then placed in the hole, the stronger roots are cut back a little, and after being spread out are covered with the good soil, firmly pressed down, and then well watered. Pot roses treated thus usually grow well, always provided that the roots left on them are strong and healthy.

CHAPTER III

PRUNING ROSES

ALL experienced rose growers are agreed as to the proper pruning of roses being one of the most important operations in gardening, but one that cannot be altogether looked upon as being quite simple. Without being too diffuse, we will endeavour to explain to the beginner the main principles underlying the operation.

THE OBJECT OF PRUNING.

Experienced rose growers are frequently asked by beginners, "Why should roses in particular be pruned, instead of allowing Nature free play to develop without restriction all growths which naturally appear?" The question is not altogether without reason, for, as a matter of fact, a rose which is allowed to grow naturally will bear a rich display of flowers the first year or two. These flowers, however, will not be equal in either size, beauty, or appearance to those which are borne on a properly pruned and restricted plant of the same variety. Besides, the unpruned roses will in a short time assume a wild and irregular form, and become less suited for the pleasure garden; and while they, for example, become strongly developed on the side turned to the sun and light, the opposite side will remain in a perceptibly backward condition.¹ By means of proper pruning, we

¹ The beginner will find it a very instructive experiment to cause these phenomena by allowing a strong growing specimen of a rose to develop naturally for several years, without in any way restricting its growth.

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aim at producing a certain form in the first place. In this way the irregular growth of the individual branches is kept in check, and a superior decorative effect is produced at the same time. The individual flowers also are more beautifully developed, and more regularly distributed over the head of the plant. The great importance of correct pruning for the good health and the strong development of the rose will be explained more fully below.

PRUNING ROSES IN AUTUMN AND SPRING.

The annual, necessary, pruning of roses may be taken in hand in autumn, before the plants are bent down and covered up; or, in spring, as is generally done, and also more to be recommended, soon after the plants have been uncovered and tied up. It is easier in the latter season to select the healthiest and sturdiest shoots which have come safely through the inclemency of the winter, and from which the framework for the coming summer can be formed.

As we have already referred slightly to the objects aimed at by pruning, we shall now proceed to lay down the most important principles which have to be taken into consideration.

The pruning of roses—especially of standard roses—may be divided into two distinct operations: (1) the cutting-out of shoots altogether, and (2) the intelligent shortening-back and the selection of the strongest shoots that are to be retained. In the first operation, all the old, dried-up, and snaggy stumps will be cut out entirely with the *secateur* (or pruning-scissors). The weak twigs, from which no strong growth can be expected, are treated in the same way. This is a very simple and obvious proceeding. Mature consideration will indicate which shoots are to be cut back and chosen as the

most suitable for the formation of the head later on. The following may be regarded as the chief rules of pruning :—

1. That weak shoots should be cut hard back to two or three buds, to induce strong growths to break from these.
2. That strong shoots of the previous year's growth should be cut back less severely, leaving six to eight buds upon them, so that out of these flower growths may develop.
3. That all weak and too prominent young growths should be removed, as they lead only to an unsightly crowding of the head.

As already mentioned on p. 25, it is only by the "rejuvenescence" of the head through judicious pruning that growth can be concentrated on a regular number of strong healthy shoots. In the case of weak-headed plants, such as weak-growing, two-year-old budded shoots, it is therefore best to leave only two or three of the best branches, and even these should be cut back to two or three buds; all others, however, should be removed at the point from which they spring. When the whole flow of the sap is thus confined to a few good buds, there is a far better prospect in view of a more luxuriant head being gradually formed than when one allows such plants (which are usually deficient in root-fibres) to develop numerous weak twigs all over at the expense of the small amount of nourishment at their disposal. With such weaklings, pruning is essentially a matter of life or death. If left alone, the heads will resemble a scraggy birch-broom with weak shoots, and after producing a couple of flowers, will dry up and decay by the autumn. If, on the other hand, the plants are severely pruned, the result is sometimes attained that the patients recover, become stronger rooted, and

PRUNING ROSES IN AUTUMN AND SPRING 33

continue to live. Generally speaking, however, the lover of roses will find out by experience that such wretched plants, even with the greatest possible care, very rarely attain to a happy or prosperous condition. The best thing to do, therefore, is not to be bothered with such plants for several years, but rather to replace them in time with more sturdy plants.

It is a quite different matter with strong, healthy plants, with which we are indeed certain of a fine growth. But even with these one should endeavour to secure an economical distribution of the flow of sap, and regulate it by means of pruning. If we were to allow all old shoots and twigs of previous years to remain upon such plants, it would lead to rank wild vegetation, to a disorderly crowding of the head, and to a premature debility of the plants. Such a waste of strength is avoided by proper pruning, when we come to consider that the head of a rose is made up only of a certain number of twigs and shoots, which, being nourished by a copious flow of sap, will bring forth a pleasing number of highly beautiful and well-developed blooms. By pruning, therefore, we see that a light and beautifully regular head is produced, and that such consists—according to the condition and strength of the plants—of say six to ten shoots of the young wood of the previous year's growth. The head which had been formed the year before should be thinned out, and old dry wood removed—with the saw if necessary. The weak shoots should also be cut out from the denser growing branches, allowing, if possible, only young wood to remain to form a symmetrical framework. There is no hard and fast line as to how far back these main stems for the future head—say six to ten in number—are to be cut back, because the conditions of growth peculiar to the different kinds must be taken into consideration, and are referred to again in this

volume. With the great majority of the so-called Hybrid Perpetuals or Remontant Roses (see "Classification of Roses," p. 7), which with the Tea Roses constitute the great bulk of our most handsome garden roses, it is usually correct to cut back the shoots to four or five inches in length, so that the "spread" or diameter of the pruned head is about a foot or sixteen inches. In this way the longer shoots would be left with six to eight buds upon them. The uppermost bud on every shoot should point outwards, so that the head shall not afterwards become too bushy in the centre. The weaker twigs in the middle are also to be removed for the same reason. Thus a more open centre is secured by means of a certain number of the strong, pruned shoots that form the groundwork of the head, and there is every promise of beautiful and well-developed flowers from the regulated flow of sap.

In many private gardens in which the roses are pruned, not by an expert gardener, but by half-ignorant garden labourers, one may observe that the work is by no means performed in accordance with the rules already laid down, but in a mechanical and slovenly manner. Such persons, who are better acquainted with the hedge-shears than with the pruning-knife, frequently devote their attention to shortening back the outer shoots of the head, while they allow far too many growths to remain in the centre of the plant, and only thoughtlessly snip off the tips. Treated in this way, roses, indeed, at first often bear an abundance of blossom, but exhaust themselves in the course of a few years, and then become a broom-like skeleton of weak, bare shoots from top to bottom. With plants pruned in such an improper way there is little that can be done, as the woody shoots are no longer suitable for being cut back properly.

As stated above, different kinds of roses require to



Madame Victor Verdier.

PRUNING ROSES IN AUTUMN AND SPRING 35

be pruned according to their nature if they are to be brought into a free-flowering condition. It is thus necessary to observe that the particularly strong-growing kinds of Tea Roses, Hybrid Tea Roses, and Noisettes, are not to be cut back according to the rules of pruning laid down at p. 32 ; but the long shoots may have the tops slightly shortened back, as otherwise, instead of developing flowers from the central buds, they would always endeavour to produce new long growths. Amongst varieties with these peculiarities, the following may be mentioned, viz. : *Maréchal Niel*, *Gloire de Dijon*, *Madame Bérard*, *Beauté de l'Europe*, *Reine Marie Henriette*, *William Allen Richardson*, *Madame Pierre Cochet*, of which kinds, it may be remarked in passing, that the tying down of the long shoots has a good effect upon the production of the flowers.

The climbing or trailing roses that flower only once in the season, are best pruned neither in the autumn nor spring, but at the end of the flowering period, when the shoots and twigs that are too close together may be removed. The strongest growths of the current year, however, are only to be slightly shortened, because these are the very ones that are to bear the display of flowers the following year.

In conclusion we may consider those families of roses, the growths of which more particularly are not to be cut back, because they bear most of the flowers at the tip of the shoots, as for example the Cabbage or Centifolia Roses, the Moss Roses, Scotch Roses, and the Austrian Briars. From these kinds, which are almost entirely grown as bush roses, only the old shoots are to be removed so as to give more space to the younger ones.

From what has been said, the beginner will probably be able to understand that the proper pruning of roses is not altogether a simple matter, but, like other

arts and amateur pursuits (such as sports, hunting, angling, &c.), cannot be learned by mere book-study or tabulated rules; it requires practice, experience, and thoughtfulness. The amateur is more quickly and more surely assisted in gaining a certain knowledge of, and manual dexterity in, the art, by personal practical instruction from an experienced and competent gardener, than he would be by whole pages of printed information, the meaning and value of which he first begins to appreciate when he has mastered the elementary principles of the art by means of some practical work of his own.

PRUNING ROSES IN SUMMER.

In every well-kept flower garden one has frequently to cut off and remove the numerous over-blown roses during the summer months. This is chiefly done for the sake of preserving a neat and well-ordered appearance in the garden. It serves, however, at the same time, the object of preventing the development of the fruits, and thus allows the flow of sap to better reach the young rose-bearing shoots. Although, perhaps, not altogether intended, it is on the latter principle that summer pruning is performed. The usual method with most amateurs and dilettanti is to cut away, without any exception, the shoots about three inches beneath the over-blown roses. This method of pruning apparently keeps the contour of the head in order; it is nevertheless wrong, because it prevents the development of the stronger buds lower down the stem. In order, therefore, to prepare for the sprouting of strong, healthy growths for the production of more beautiful and better-developed flowers, the stems should be cut back much harder, usually to three or five, or at most six to seven leaves, especially those with buds in the axils. Hard and fast rules cannot be laid down with any certainty in

regard to this matter, as the habit of growth of the particular variety, and the individual plant itself, must always be taken into consideration. A good general rule, however, that may be worth remembering is, that the stronger shoots do not require to be cut so far back (*i.e.* so severely) as the weaker ones. What has been said above in regard to the pruning of different kinds of roses should not be forgotten; and it should also be borne in mind, so far as summer pruning is concerned, that particularly strong growing kinds, like *Maréchal Niel*, *Gloire de Dijon*, &c., are only to be cut back slightly (see p. 35).

[Readers will find the National Rose Society's "Handbook on Pruning Roses," which has just been issued, of very great use in the pruning of all kinds of roses.—J. W.]

CHAPTER IV

WINTER PROTECTION OF ROSES

IN the chapter on Native Country and Climate (see p. 13) attention has already been called to the fact that most of our choice garden roses now in cultivation were originally derived from wild ones; that these were natives of warmer climates than our own, and that such tender kinds have not ceased to be susceptible to the very severe cold of a central European winter, notwithstanding generations of acclimatisation and cultivation. It therefore follows that they must be protected against the action of very low winter temperatures. In Central Europe this protection is usually given by covering the heads of the roses that have been bent down to the ground with soil, the stems themselves, in any case, being covered with soil or fir branches; and in the case of dwarf or bush roses, with eight or twelve inches of soil, in order to pull the shoots up closer together.

THE BENDING DOWN OF STANDARD ROSES.¹

Experience teaches that this operation should not be taken in hand too early. One need not be too anxious in regard to the choice of time, as even the most delicate roses can bear a few degrees of frost (say 9° or 10° F.) without danger. The longer, therefore, the weather remains open, the longer may the bending down be deferred, so that the shoots may become more thoroughly

¹ This operation is not practised in the British Islands.—*J. W.*

ripened, and thus be more capable of resisting the action of severe cold. As a general rule there is no need to bend the plants down before the beginning or middle of November. At this period, usually, there are still no severe frosts, and the stems may be easily bent down without using much force. The operation is performed as follows: At the base of the stem a spadeful of soil is taken out on the side towards which the stem is to be bent down. The stem is now drawn carefully forward and bent down towards the soil so that the head rests upon it. The soil that was at first taken out is now returned again, so as to afford protection to the lower part of the stem. The head, and, when possible, also a large number of the shoots, are now covered with dry earth, so much so, indeed, that only a few tips of the shoots are to be seen. The soil covering the head should be in the form of a mound, so that the rain shall run off easily.

Of course, one must always be careful when bending down the stems, so as to avoid breaking them off near the soil. It is therefore usual to bend the stems each year down towards the same side. Even with the greatest care, it sometimes happens that one stem or another cracks close to the soil, usually at a point that was somewhat defective, owing to an earlier bark wound that had not healed up properly. In such cases, however, all is not yet lost if one takes the trouble to carefully bind up the broken part—the under side of which is usually uninjured—with a pliable osier. A piece of rag may then be wrapped round it, and finally the whole should be bound up with good raffia or other tying material. This operation often succeeds admirably, and allows the passage of the sap, if the stem is otherwise strong and healthy. In the case of very strong stems, which can scarcely be bent down without danger of cracking owing to their thickness, the heads and stems

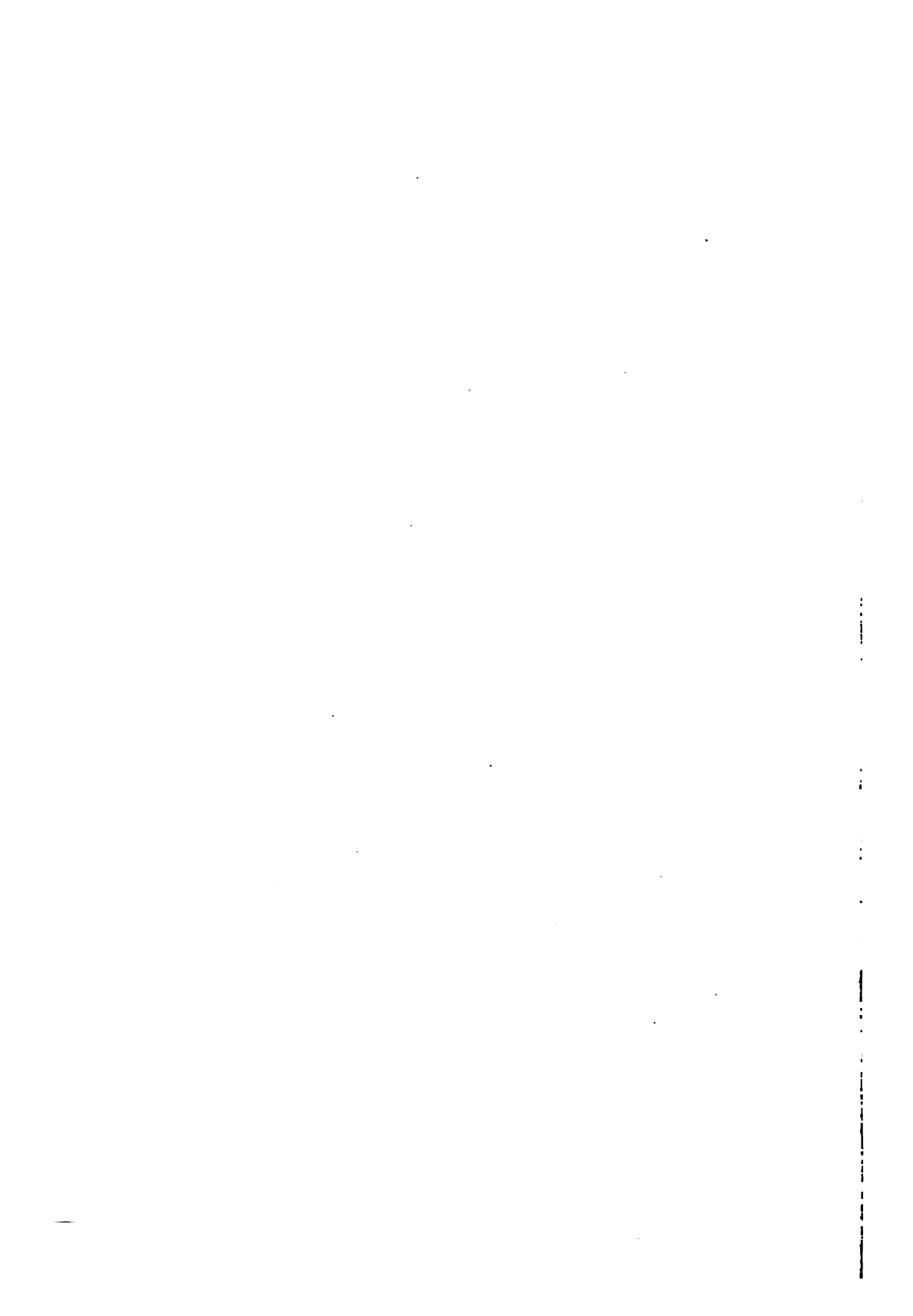
are wrapped in pack-cloth, canvas, or some such material, in many of the smaller gardens. It is a somewhat troublesome operation, which, however, renders very good service in fairly severe winters, although, on the other hand, it has proved insufficient with particularly hard frosts.

Attention must now be called to a few special measures of precaution. When bending down stems it is not a good practice to allow the rich green leaves to remain upon the shoots, as they easily collect moisture and rot during the winter months, and thus injure the more delicate shoots. It must also be specially noted that there are more dangers to be feared to the bent-down plants from persistent wet than from severe cold. In heavy, undrained soils, it is advisable to place a layer of loose, dry material, such as sand, turf, pine needles, moss, wood wool, coal ashes, dry leaves, fir branches, &c., between the head of the plant and the soil before the former is finally covered up. The same materials may also be used for covering up the heads if there is not a sufficient quantity of loose soil handy, although this always makes the best covering.

The above are the principal features of winter protection, and they will be sufficient to bring the great majority of roses safely through the winter. With such particularly tender kinds as *Niphetos*, *Perle des Jardins*, *Madame Chédane Guinoisseau*, *Hon. Edith Gifford*, *Madame Eugène Verdier*, *Lamarque*, *Souvenir du Rosériste Rambeaux*, *Madame Falcot*, one may make doubly sure by means of covering the heads with dry peat fibre, leaves, or pine needles, and making a protective roof out of two pieces of board, which may also be well covered with loose soil or short litter from the stable. The stems themselves should be covered with loose earth.



*Louis
van Houtte.*



UNCOVERING STANDARD TREES.

Just as the amateur was advised above, when speaking about the bending down of the stems, not to perform the operation too early, so now, when considering the uncovering of stems, he is advised not to leave this until too late. Generally speaking, rules that are applicable in every season cannot be framed, as climate and position have to be taken into account. It may be taken, however, as a general rule, for instance in Central and Southern Germany, that one may commence to uncover his plants in spring about the middle of March. At first the uncovering material should only be loosened and slightly drawn away, so that the roses become gradually accustomed to the open air. In most seasons the latter end of March or the beginning of April may be regarded as the normal period for uncovering the plants; it is only in particularly late springs that the operation is delayed beyond this time.

In a few words we will inform the beginner what the advantages are of uncovering at the right time, and the disadvantages of uncovering too late. Should frosty weather continue in spring longer than usual (say, until the middle of March), it will be observed that the heads of the roses covered with soil show no signs of premature growth, and remain protected against the night frosts. Now, however, real spring weather suddenly sets in, with warmer rains and southerly winds; so that with the arrival of fine hot spring days, the upper layers of soil which cover the roses are quickly warmed through, and the plants also soon commence to grow rapidly. We may easily convince ourselves of this fact by removing the soil from some of the heads, by way of experiment, to see if the buds have already commenced to shoot strongly or not. If they have, the uncovering should be

commenced at once, especially in warm, sunny positions, otherwise the growths beneath the soil will grow longer than is desirable, usually into slender, pale-yellow shoots, which, later on, become starved and remain backward in developing leaves. These "drawn" shoots, as the gardener calls them, indicate a useless waste of vigour, which should be prevented by uncovering the plants at the right time; for, once the sprouting shoots are exposed to the open air, they develop more slowly and more healthily, without being so tender that they are likely to be checked by the night frosts, which, indeed, are not yet quite absent at this period.

In the case of bush roses also, the mounds of soil will be removed from them upon the approach of warmer spring days—say the middle of March, or later.

Before tying the uncovered roses to the stakes, they may be left for some little time in semi-erect positions, so as to be well exposed to the air and rain. The spring pruning referred to before (see p. 31) may also be done more easily at this time than if the stems have been already fastened to the stakes.

CHAPTER V

STAKING AND TYING ROSES

It is evident that in a well-appointed pleasure garden every standard rose tree should be fastened to an erect stake, so that it may not be displaced from its position by the wind or weather. The length of the stake should be in accordance with the height of the stem, so that its upper end reaches the point at which the head begins to spread; it will thus not project into the branches, the pruning of which would be made more difficult thereby.

Perhaps the most serviceable stakes are made of pine-wood, and may be purchased either in a rough state, in lengths of about $6\frac{1}{2}$ feet to $8\frac{1}{2}$ feet, or in prepared lengths of about 5 feet. In the unprepared stakes there is a certain amount of waste of the thinner upper end, but this comes in useful for the tying up of dwarfed shrubs and bushes. These pine-wood stakes, of course, do not last for many years, as they gradually decay in the soil, and eventually are only useful for the tying up of dwarfed stems. Their purchase, however, entails but comparatively little expense.

Of late years attention has been directed to the so-called Tonkin or bamboo stakes, which are extremely durable owing to the strong flinty nature of the rind. There are many different kinds in commerce, however, some being much inferior to others; only the good, well-ripened ones, which may be distinguished by means of their shining yellow rind and great hardness, deserve warm recommendation. Only the strong bamboos, at

least $\frac{3}{4}$ -inch in diameter, are specially adapted for rose stakes. As they should be pushed into the soil about 2 to $2\frac{1}{2}$ feet deep, their total length should therefore be about $6\frac{1}{2}$ feet. Thinner stakes than those mentioned are useless for standard roses. All sizes may be obtained from any nurseryman or florist. The rose stems may be fastened to the stakes by means of thin elastic osiers, or other material, the *modus operandi* being easily learned from any practical gardener.

LABELLING ROSES.

When tying up roses it is advisable to distinguish them, and the labels especially should be seen to, and, wherever necessary, renewed. One should also endeavour, even in small or medium-sized gardens, to provide each rose with a label or other distinguishing mark, from which it is possible to read the name of the variety. In large gardens, rosariums, and rose nurseries, such distinguishing marks are absolutely essential. Wooden labels should only be used in a provisional way, as the writing on them remains legible but a very short time.

Zinc labels, which are written upon with chemical ink, are much more lasting and more worthy of recommendation. Such labels keep good for a long period, especially if one takes the trouble, from time to time, to wash them, and afterwards, when thoroughly dry, rub the surface over with an oily rag. White porcelain labels, with burnt-in letters, are distinctly more pleasing than zinc ones. They last a remarkably long time, and are really cheap—very cheap in proportion.¹

For fastening labels, copper, lead, or galvanised wire may be used. One must, however, take care that the

¹ Pinches' "Acme" labels, with raised letters, are very legible, and last for years.—*J. W.*



Maréchal Niel.

Produit par H. K. K. K.

wire does not cut into the stem as the latter increases in thickness.

In some nurseries, strips of lead are used instead of labels. These strips are wound round the stem or "collar" of the plant, and have the catalogue number of the roses stamped upon them.

This method of labelling is also advisable for amateurs who cultivate a large number of roses. The use of stamped leaden strips, however, necessitates the use of a special catalogue of the most notable roses, in which the numbers run consecutively.

He who does not wish to undertake the work himself, but wishes, nevertheless, to have his roses labelled with the leaden numbered strips, will attain his object by using the labels of any large rose nursery. Then, when the annual catalogue of that particular establishment appears, it also serves as a catalogue of his own collection.

The numbered strips of lead are also particularly suitable for labelling budded plants, as well as those seedlings that have been raised from artificial fertilisation—the numbers of the two roses which have been crossed having a hyphen—or a cross × stamped between them. The stamping in of the numbers necessitates the use of a stamping iron, or a stamping outfit, that may be obtained from a horticultural sundriesman.

PART III
PROPAGATION OF ROSES

PART III

PROPAGATION OF ROSES

IN order to obtain a very large number of roses, the professional gardener employs various methods, such as raising from seeds, propagation from suckers, cuttings, &c. We shall have occasion to refer to the most important of these methods again, although they do not come so much within the operations of the amateur rose grower. In order, however, to make it perfectly clear, we shall deal below, on the other hand, with one of the most important and easiest methods of propagation for the amateur, namely, "Budding."

The operation of budding (just in the same way as grafting and other methods of ennobling plants) is based upon one of the most remarkable of natural phenomena, the discovery of which has exerted the greatest influence upon gardening and fruit culture. Some kinds of ennobling appear to have been known to the ancient Greeks and Romans, but greater perfection in the most varied methods of ennobling was attained and practised in the course of the last century.

In these days many thousands of plants are ennobled by budding and grafting, as a mere matter of course, and the operation is regarded as a simple and evident matter of fact without further consideration. And yet we ought to regard, in the most serious manner, each plant that has been successfully budded or grafted as a kind of marvel—as a settled law of nature which

progressive cultivation has known how to use for its own purposes.

As a matter of fact, when budding or grafting, we at once take it for granted that any tree or shrub, into which a strange bud has been inserted, is compelled to send up the sap from its roots just as freely to the strange bud as it had hitherto done for its own buds and shoots. This means a remarkable accomplishment for horticulture; but what always seems to be so extraordinary, and keeps us in perpetual astonishment, is the visible phenomenon that first comes to light when the particular bud or graft (even in the case of a single bud) develops strong outward growing shoots, flowers, and fruits.

For the sake of example, let us consider a perfectly healthy fruit tree, several feet high, which has already borne fruit, which, owing to its inferior quality, is not in accordance with our tastes. If the art of budding had not been discovered, there would be nothing left for us beyond either being content with the inferior fruit or to cut the healthy tree down and replace it with a more approved variety, and then waiting for several years until the latter bore fruit. But the art of budding puts the matter on a totally different basis. By its means we have it in our power to allow the healthy tree that has been taken as an illustration to remain standing, and by improving it (either by budding or grafting), to enable it to bring forth, in the course of a few years, fruits of a more agreeable and superior quality. The astonishment referred to above even lies in this possibility, and it would be more acceptable perhaps to ordinary common sense, that, in the case of the strong fruit tree we have chosen as an example, if we were to shorten its best shoots and branches, and replace them with buds or grafts of choicer varieties, the sap rising up with full force from the

roots without opposition, and without losing any of its original peculiarities, would be transmitted to the choicer varieties. Such, however, is not the case; and here again one is astonished that the still weak bud of a choice fruit tree, rose, &c., should possess the power and possibility of being able to assimilate at once the strange sap of a stem on which it is placed; that is to say, it converts the sap to its own peculiar purposes, without being influenced by the race-peculiarities of its strong supporter. We are also in a position to rob the parent stem of a wild rose, fruit tree, &c., of all its own shoots and growths, and individual peculiarities by budding or grafting upon it; it submits willingly to our artificial usurpation, and at the same time freely supplies nourishment for all the strange shoots and their appendages, just as if they were all brought forth by itself.

Experience has taught us to regard the successful growths from buds or grafts as indicating a certain intimate relationship between the stock and scion. To select a few examples, one may bud or graft a pear upon a pear or quince stock, or even on a whitethorn, an apple upon the wild apple or crab stock; but apples cannot be successfully "worked" upon pears, or *vice versa*.

Wild roses only are used as stocks for budding the choice varieties, although amongst these there are some kinds which obstinately refuse to nourish the buds inserted in them. Such kinds, of course, are rejected for budding purposes, although occasionally they creep in if the seeds sought for the production of wild stocks have not been selected with sufficient carefulness.

CHAPTER VI

WILD STOCKS USED FOR BUDDING

THE Briar, Dog Rose, or Hedge Rose (*Rosa canina*) shown on plate 1, has always been regarded as the best stock for "working" the choicer roses upon, and at the present day it is still highly esteemed for the same purpose. It is common in our woods, and during May and June its single beautiful rose-red blossoms constitute a charming adornment of the margins of woods and thin coppices. In the autumn the bushes are profusely adorned with the bright orange-scarlet fruits or hips, which are frequently sold and converted into preserves. On good rich soils in the woods the Briar grows strongly, and by the end of the year the shoots attain a length of 5 to 6½ feet, and a thickness of ¼ to ¾ of an inch. In many places the digging up of these wild stocks and selling them forms a special branch of industry for the poor people, who obtain permission from the various owners of the woods to go in search of them. Formerly stocks dug up out of the woods or hedges were almost universally employed for budding, and even to-day there are many amateur rose growers who prefer them to any other kind of stock. Owing to the fact, also, that these stocks are still easily procured in many localities at a very cheap rate, that they can be recommended with confidence, especially if the purveyors understand their business, and only supply as far as possible well-rooted two-year-old stocks, which have smooth green or reddish bark, and not too much pith. Occasionally, indeed, an



old stock with grey, shrivelled bark will appear amongst them, whose root stock more resembles the handle of a smooth walking-stick than a finely rooted rose stock. If, however, there is only a small percentage of such old and slow-growing samples, they can be placed on one side, and the others secured at a cheap rate. The chief points to notice are that the stocks are carefully handled, so that their bark shows no great damage or marks of burning, and that their roots are in a moist, and not dried-up state upon their arrival.

Such stocks are procured at the end of October with a view to being budded the next season—of course not in the following spring. The shoots and leaves are removed, and the stocks are planted in the desired positions, about ten inches deep, bending them down and covering them with earth, so as to afford the necessary winter protection in very cold localities.

STOCKS RAISED FROM SEEDS.

As the profit on wild stocks, for which there is an ever-increasing demand, dug up in the way above-mentioned, is no longer sufficiently alluring, especially in the neighbourhood of large towns, the necessity for procuring them in other ways gradually made itself felt; and, as a matter of fact, better means have been found by certain enterprising persons of supplying large numbers of Briar stocks that have been raised from seeds. This not altogether simple method of increase (which necessitates much time and too much detail on the part of amateurs) has assumed large proportions in a short time, and the employment of it has still further curtailed the supplies of the wild stocks dug out of the hedges. These seedling Briars have a great advantage over the wild ones from the hedgerow, inasmuch as they are usually well furnished with roots, and are not

appreciably dearer. The slightly higher price is scarcely taken into consideration by the amateur who requires only a small number. Large rose growers, on the other hand, either raise the Briar seedlings themselves, or order them in large numbers at particularly low rates from those who make a speciality of raising them on wholesale lines. Although, as already stated, but few amateur rose growers will undertake the troublesome process of even rearing seedling Briars, it may nevertheless prove interesting if they had an experience of the process as above described.

RAISING STOCK FROM SEEDS.

The seeds, or rather the fruits or hips of the Briar (*Rosa canina*) should be collected in late summer. The hips should then be placed in water for two or three days, and afterwards crushed with a wooden club, so that the seeds are set free and can be easily washed out. The usual experience of these seeds is, that a comparatively small number germinate, so that they should be thickly sown as soon as possible after they have been collected. For this purpose a seed-bed of about $3\frac{1}{2}$ feet wide is prepared, having five drills running length-wise, in which the seeds are sown a little over an inch deep. In the following year, if a sufficient number of the seeds have sprouted, and the seedlings have developed four or five little leaves, they should be carefully taken up, with as little injury to the rootlets as possible, and immediately transplanted into another bed of similar width. In this there should be a distance of 6 or 7 inches between the rows, and about $2\frac{1}{2}$ inches should separate one little plant from another in them. In the following (second) autumn, the plants, which under the most favourable conditions will have reached a height of 8 to 16 inches, should be taken up with care and once

more transplanted to a newly prepared bed about $3\frac{1}{2}$ feet wide. Only three rows, however, will be made in this so as to give more space, and about 10 inches should be allowed between the individual plants. After this second transplanting the stocks are to remain. Their shoots should be cut back about half their length, and the soil in which they are growing may receive a dressing of well-decomposed manure. In the third summer they develop strong shoots 5 to $6\frac{1}{2}$ feet high, and in the autumn they are lifted and transplanted, or may be sold, so that by the fourth summer they become ready as suitable standard stocks for the budding of choice varieties.

The planting of stocks required for next year's budding is generally performed in the same way as explained in the chapter on "The Planting of Roses" (see p. 21), and must be done unconditionally in the autumn—say at the end of October or beginning of November—so that the roots are growing in frost-free weather, and continue to make fine masses of fibres.

It is a great advantage if the stocks can be finally planted in the places in which later on they are to remain as standard trees, such, for instance, as in the beds of a newly laid out garden at the sides of the principal walks, or they may be planted in the place of a tree that has died. In this way the stocks can be budded in their permanent positions the following summer, and a year is gained, because another transplanting, which always upsets the roots to a certain extent, is avoided.

Another reason is that if the amateur has secured plenty of space, he will always have in view the object of gradually increasing his collection of choice varieties, and therefore provides himself with a number of transplantable rose stocks. He will make a special effort to find room for them, so that later on when the buds have

pushed forth, there will be no necessity to transplant again. With this object in view the selected spots are dug up in the summer, and, if necessary, the soil is improved by cow manure, &c. Before planting, the ground should be divided into parallel rows, which may be marked out with sticks and lines, so that a distance of at least 20 inches should be between the rows, in which the holes for the roses should also be marked out. It is not advisable to have the rows nearer than 20 inches, as the budding operations would be otherwise hindered too much. The distance between the stems of the individual stocks in the rows should be from 12 to 16 inches.

After the stocks have been planted in this way, they should be bent down for the winter protection, if possible all towards the same side. Those lying one upon the other should be tied together with osiers, thus giving each other mutual support. The rows may be covered with 5 or 6 inches of soil. In the following spring the weather is the factor which determines the period of uncovering—the middle of April being on the whole the most suitable time. (See the "Uncovering of Standards," p. 41).

[Besides the Briar, another stock called the "Manetti" is also largely used in the British Islands. The Hybrid Perpetual Roses, with few exceptions, are generally grafted or budded on it. For most of the Tea Roses and their relatives, however, the Manetti has been proved by experience to be practically useless as a stock.—*J. W.*]

CHAPTER VII

BUDDING

THE manual dexterity required for budding is easily acquired, especially if one has an opportunity of being shown how to perform the operation by an experienced gardener or amateur. The most simple and popular kind of budding is that in which a short transverse cut is made in the soft bark, and running into this another one from below upwards—thus making a cut like the



Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.

letter T (see Fig. 1) into which the bud of the choice variety is inserted. The bud is cut out in the form of a long narrow shield from the shoot of a choice variety. It is then pushed into the T-cut from above, and is covered with the edges of the upward cut as in Fig. 3. The bud is then carefully and firmly bound with bast, raffia, or other material, in such a way that the bud remains uncovered, but the edges of the T-cut are drawn together as a protection against drought or the penetration of rain. Briefly, these are the three operations that have to be performed when budding. Exceedingly simple as

it appears, it nevertheless requires to be done with great precision and under the most favourable conditions and surroundings if it is to succeed. We do not therefore consider it superfluous if we go into these matters a little more in detail for the benefit of the beginner, so as to prepare him in advance for the numerous failures which will certainly await him until he has acquired some little proficiency. Any preliminary theoretical knowledge will guide him more quickly to the practice of the art than if he learns wisdom by experience only, and he must therefore be made aware of the numerous pitfalls.

The most important preliminary condition for successful budding is—that the sap is rising in the stock, which is apparent when the two edges of the upward cut shown in Fig. 1 are easily opened with the budding-knife without being fibrous. If a slight crack is heard when making the T-cut, it is a good sign, as it indicates that there is sap in the bark of the stock, and that it may be easily opened. Budding which is done by forcing the bark open usually fails; in other words, it is a waste of time and trouble to occupy one's self with such sapless stocks. They may, indeed, be allowed to remain for another season to give them a chance of being more strongly rooted and richer in sap, and to have developed side shoots that may be suitable for budding. As a rule, however, there is not much to hope for with such wretched stocks, and it is therefore better to replace them in the autumn with healthy stocks, rather than be bothered for several years afterwards with such old, half-dried-up specimens. It is of the greatest importance for successful budding to secure buds exactly in the right condition. They should be well developed, oval, dormant buds that have not yet begun to shoot. They are always to be found in the axils of the leaves, preference being given to those situated about the middle of a ripened shoot that has





already flowered. The ripeness of the shoot may be known by the fact that the prickles can be easily removed from its surface. The buds at the end of an immature or very sappy shoot should not be selected for budding; nor are the scarcely developed buds on the lower portion of stem suitable. The annexed illustration (Fig. 5) shows the central portion of a bud-shoot cut from a choice variety. The buds are all suitable for budding. If we obtain such a shoot in our own or



Fig. 5.



Fig. 6.

from another garden, all the leaflets beyond the stipules on the leaf-stalk are removed so as to check evaporation from the sap that circulates in the leaves. The shoot then appears as shown in Fig. 6. In the case of shoots (or scions) obtained from a distance and packed in damp moss, the leaves are already removed in advance, because this is generally considered to be essential to keeping the shoots in a fresh condition. The most suitable buds upon the shoot are now decided upon, and one after the other is cut out as required in the way shown in Fig. 2. Before pushing the bud into the T-cut, the stipules on the stalk are removed in every case with a sharp knife; the little stalk is then about $\frac{1}{2}$ to $\frac{3}{4}$ of an inch

long, and enables one to hold it in the left hand and push the bud into the T-cut. It is advisable not to detach too many shoots at one time from a plant, and these should be wrapped in a wet cloth or damp moss so as to keep them in a fresh condition. It is also of great importance to keep the budding-knife clean and free from rust, &c.

THE BEST TIME FOR BUDDING IN THE OPEN AIR.

Budding may be described as of two kinds—(a) budding with a shooting “eye,” and (b) budding with a dormant “eye,” upon which it may be observed that the latter method is far and away the most general.

Budding with a shooting eye may be done at the end of May or in June, and at the beginning of July, should the stocks be sufficiently sappy and good ripened buds be obtainable. Before the middle of June, it will certainly be difficult to secure well-ripened shoots or scions in the open air. Before this period, therefore, such shoots can only be cut from pot plants that have already bloomed in greenhouses during April and May.

The expression “to bud with a shooting eye,” means that those buds inserted thus early in the year commence to grow after a short time so freely that they are likely to produce flowers the same season. When this takes place, with the assistance of favourable weather and diligent watering, the impatient amateur experiences a special delight in having secured flowering plants a year earlier than if he had used dormant buds about two months later on. At the same time it must be stated that budding with a shooting eye is quite an exceptional performance in large nurseries where tens of thousands of plants are budded, simply because the success is too uncertain, and because many of these early season buddings make but weak sappy growths, which are unable

to stand the approach of the winter frosts and die down to the ground.¹

When the growths from shooting buds have grown as much as four inches beyond the point of insertion in the stock, the scar in the latter should be smeared over with grafting wax. When the bud commences to grow, and the shoot has reached a length of an inch or two, all the wild growths on the stock should be cut away, so that the rising sap should flow freely to the shoots of the choice variety alone. The stronger the latter develop, the sooner will they be in a position to resist the approach of the coming winter. It is always advisable, in the case of such young growths obtained from budding with shooting eyes, for example, to pay special attention to protecting the head which has been formed, in the way described in the chapter on the "Winter Protection of Roses."

Budding with dormant eyes is practised from the end of July to the middle of September, and, as already stated, has a greater chance of success. The object in view is to secure the union of the buds to the stock, but that they shall remain undeveloped and not sprout until the following spring. When budding with dormant eyes, it is also of great importance that the sap should be rising freely in the wild stock. With this object in view, the soil—especially in dry summers—should be loosened with the hoe and receive repeated waterings about a fortnight before the budding is to take place, so that the soil shall be in a thoroughly moist condition, and thus supply the necessary sap to the stocks. Experienced gardeners working in large rose nurseries,

¹ M. Lebl, in his excellent *Rosenbuch* (Berlin, P. Parey, 1895), discounts budding with shooting eyes on principle, and, amongst other things, says that "those buddings with shooting eyes which do not die down to the ground in the first winter, seldom possess the vigorous growth of those plants that have been budded with dormant eyes."

recommend another fortnight before budding—that is, not immediately before the insertion of the buds—that all side shoots from the base upwards should be removed with a sharp knife—"trimming" the stocks as it is called—leaving only four or five of the uppermost side shoots to remain. In this way the flow of the sap is directed to the upper portion of the stock upon which budding is to be done. At the time of budding it is not advisable to remove the side shoots from the stock beneath the point of insertion, otherwise the rapid flow of the sap upwards would cease, and the quick union of the bud and stock would be unfavourably influenced.

The side shoots above the budding point, if not too numerous, are allowed to continue their growth, but are removed at the first opportunity in winter. The top of the stock itself is left uncut, so that it serves in the following spring, after the removal of the wild growths, as a support to which the young shoots of the choice variety may be tied.

Even when budding with dormant eyes during August, it frequently happens—especially in warm, moist weather—that some buds sprout, that is to say, make small premature growths which have a difficulty in living through the winter. Such growths are therefore cut back to short spurs before the winter sets in, so that the adjacent buds may push forth growths the following spring.

The height at which stocks are to be budded will depend upon the taste of the individual. Many amateurs attach great importance to producing very tall standards, but it is not so easy to keep such plants— $6\frac{1}{2}$ to $8\frac{1}{2}$ feet high—in good order when pruning. With such tall standards, also, one cannot enjoy so well the pleasure of the individual roses, or their fragrance, as they are out of reach. It is, therefore, almost universal to consider a height of about $3\frac{1}{2}$ feet as being the best and

most desirable for the insertion of the buds, so that when the head is developed it is about 5 feet from the ground. Exceptions to this rule are willingly made in the case of such particularly strong-growing roses as *Maréchal Niel*, *Gloire de Dijon*, *Reine Marie Henriette*, and many other kinds, which make charming "weeping" roses, when budded on tall stems from which their strong shoots may be bent downwards, so that the flowering shoots grow towards the spectator. Of course, such weeping or drooping shoots are not to be cut back, or only very slightly.

WHICH IS THE BEST PART OF THE STOCK FOR BUDDING ?

Good stocks, rich in sap, and with several shoots about the thickness of a lead pencil on the upper portion, are most suitable for having the buds inserted in the stem itself, about $3\frac{1}{2}$ feet from the ground. It is well to select for the purpose a smooth, non-prickly part of the stock, situated, if possible, beneath a well-developed side growth, because one may then be sure of the rising sap at that particular spot, as shown in Fig. 7. At this point the T-cut should be made, in which the bud should be inserted at once and tied. In large nurseries two buds are usually inserted, so as to make sure of success under favourable conditions. On the other hand, gardeners in private places, and amateurs, having more time at their disposal, often insert three, and even four buds, for greater certainty, always near each other, in smooth and suitable parts of the bark.



Fig. 7.

Budding, however, is not confined exclusively to the

stock itself, but is also often performed on well-developed side shoots; especially on those stocks in which the budding of the previous year has not been successful, and whose bark has become too thick and deficient in sap in the meantime, the operation may be performed once again. Such stocks usually develop strong side shoots in spring, and by the end of July, or in August, these are in an excellent condition for budding. The



Fig. 8.



Fig. 9.

insertion of the buds on the side shoots is done in all cases precisely in the same way as detailed above. One must, however, remember to make the T-cut as near to the main stem as possible, rather than too far away from it. The side shoots that have been budded are not to be cut back, but allowed to continue their growth further from the tips, so as to keep the circulation of the sap on the move. It may, however, be desirable, in the event of these side shoots being too long, to bend them down several days before budding, and have them tied to the main stem, as shown in Fig. 8. In this way the



Madame Chédane Guinoisseau

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flow of the sap will be somewhat checked, and be of benefit to the union of the bud with the stock. Should the tying down be done after the buds have been inserted, there is then a danger of the wild shoots being broken off.

AFTER BUDDING.

The enthusiastic lover of roses is accustomed to watch with care and keen interest to see whether his budding operations have succeeded, or, in other words, to see if the buds have "taken" well. This is apparent from the condition of the little piece of leaf-stalk left beneath the bud. If this, at the end of about ten days, shrivels up and falls away at a slight touch, it is a good sign that the bud will in this case remain fresh and green. If, however, on the other hand, the little piece of leaf-stalk is stiff and immovable, and the bud itself has assumed a blackish colour, then the budding may be regarded as unsuccessful. Another bud may then be inserted if the sap is still flowing freely in the stock and the season is not too far advanced; otherwise the operation should be deferred till the following season.

LOOSENING THE TIES.

Even when the inserted bud has united well with the stock, its future is not yet quite assured, and it is necessary to give still further attention to it. The stronger indeed the growth of the stock, the greater the danger that the tying material (raffia or woollen thread) does not expand, but cuts right into the rind (as shown in Fig. 9), and thus hinders the bud from being nourished. In this way a host of successful buddings perish owing to insufficient attention. In order to prevent the tie from cutting into the bark in this way, it should be loosened as soon as the bud has

"taken," that is to say, it should be partly cut through. This should be done on the side of the stock opposite the bud, and in such a careful way with a sharp knife, that the bark of the stock is not injured. The main point about loosening the ties is, that it is to be done at the right time—to know which, practical experience is the only essential. If the tie is loosened too soon, or even removed, it then frequently happens that the edges of the bark covering the bud shrivel up and shrink towards the sides, so that the uncovered bud in any case dries up. Should one, however, fail to loosen the tie, and first notices the injury after the tie has already cut deeply into the bark, the tie should in that case be removed altogether.

CUTTING BACK THE SHOOT FROM THE BUD.

When the buds inserted in the past season have come through the winter safely, and make strong growths in May, it may be reckoned from this fact that they will develop the first flower-buds at the end of these growths about the end of May or the beginning of June. Experience teaches, however, that it is wiser to dispense with these first flowers, and pinch the top of the young shoots back as far as the third or fourth leaf, and, in the case of particularly vigorous shoots, to repeat the process on the new growths that spring from them. The object in view is to develop a sturdy head from the first; and as only the buds in the lower leaf axils are allowed to develop, the result will be a more compact and more bushy framework for the formation of the head later on than if the first shoots were permitted to grow into long, slender, flower-bearing growths.

TYING UP THE YOUNG SHOOTS.

In the case of many highly successful buddings, the union of the bud with the stock is not so firm that it can be altogether trusted. It is to be feared that tempestuous winds would seize the young head, and be able to tear it out of the socket where it has united with the wild stock. This danger, however, may be avoided by protecting the young shoots from swaying in the wind, after they have been pinched back to the third or fourth leaf. This is done in such a way that the young shoots are tied either to the wild stock itself, or to a stake, or at least to a special support attached to the stock, so that the wind cannot take a hold of them and tear them out of their point of adhesion to the stock.

TYING MATERIALS.

In most large gardens the now well-known "raffia" bast (obtained from a Madagascarian palm called *Raphia tædigera*) is almost universally employed. It varies a good deal in quality. It should be strong, but soft and rather elastic instead of brittle, and should split up into flat ribbon-like strips, but not have the appearance of dried stems of grass. The purchased three-parted "hanks" should be separated before use, and hung up in the open air during damp weather, although they should be protected from rain, with the object of getting the individual strips to spread out and thus become more suitable for use. Just before budding is begun, the raffia to be used should be soaked in water, afterwards allowing it to drain, so that it is of course still moist, but not wet. If there are a large number of buds to be inserted, a plentiful supply of

raffia should be got ready, cut into strips about nine or ten inches in length, which the budder may hang from his buttonhole or carry in a small basket. The length of nine or ten inches may appear to be rather too much to experienced practitioners. Beginners, however, are recommended not to be too stingy with such cheap material as raffia, as it is better to use only really good lengths and to have them rather too long than too short. A less used, but excellent tying material, is thick woollen thread, that is, unbleached wool. Many amateur rose growers, indeed, prefer this material, because it is more elastic than raffia, and therefore expands more readily with growth of the stock, into the bark of which it cuts but little. Another reason for preferring the woollen thread is, that it affords greater protection than raffia against the attacks of the bud-mite (the maggot of an insect called *Diplosis oculiperda*).

WHOLESALE BUDDING.

Amateurs who can find an opportunity of seeing roses budded in large numbers will find it a very instructive proceeding. When several hundreds of buds must be inserted in a single day, it is only possible to perform the task by an intelligent organisation of labour. As a rule three gardeners work together. The first cuts and arranges the shoots or scions in their sorts; he also removes the leaves and prickles from them, as well as the stipules from the piece of leaf-stalk beneath the bud. The second cuts the bud out, makes the T-cut in the stock, and at once inserts the bud. The third ties up the buds and attaches the labels. In order that the work may proceed in this way without delay, the troublesome prickles will have been already removed from the stocks beforehand.

HINTS TO BEGINNERS ON BUDDING.

Although we have already spoken of the most important principles underlying successful budding, we must not, however, omit to place before the beginner a few more points that may be of some practical value to him. It was formerly almost the universal practice, before inserting the shield of the bud in the cut, to carefully take out the thin little plate of wood at the back of it with the spatula or end of the budding-knife. Nowadays, however, this formal proceeding is being gradually neglected, because experience has shown that it is not a disadvantage to the union of the bud if a thin layer of wood, but not pith, is left at the back of the shield or plate of bark. Of greater importance for successful budding is quick, dexterous work, so that the bud which has just been cut from a shoot shall be immediately pushed into the T-cut before the thin plate of bark or "shield" curls up, that is to say, becomes blackish and thereby shows signs of shrivelling. The quick, precise cutting-out of the bud is also not of less importance. It is, of course, only by constant practice that the beginner will acquire the necessary dexterity to cut the buds out in one attempt, so that the "shield" shall be quite ready for insertion at first, and not made so by subsequent cuttings. It may be some consolation to the beginner to know that "practice makes perfect," if at first he has to contend with difficulties.

In regard to the best time of the day for budding, the morning and evening hours may be considered more favourable than during the heat and the glaring sunshine of mid-day ; for it is not desirable that the direct rays of the sun should fall upon the buds that have only just been, or are about to be inserted. When one can spare the time, the buds may be protected with large leaves of

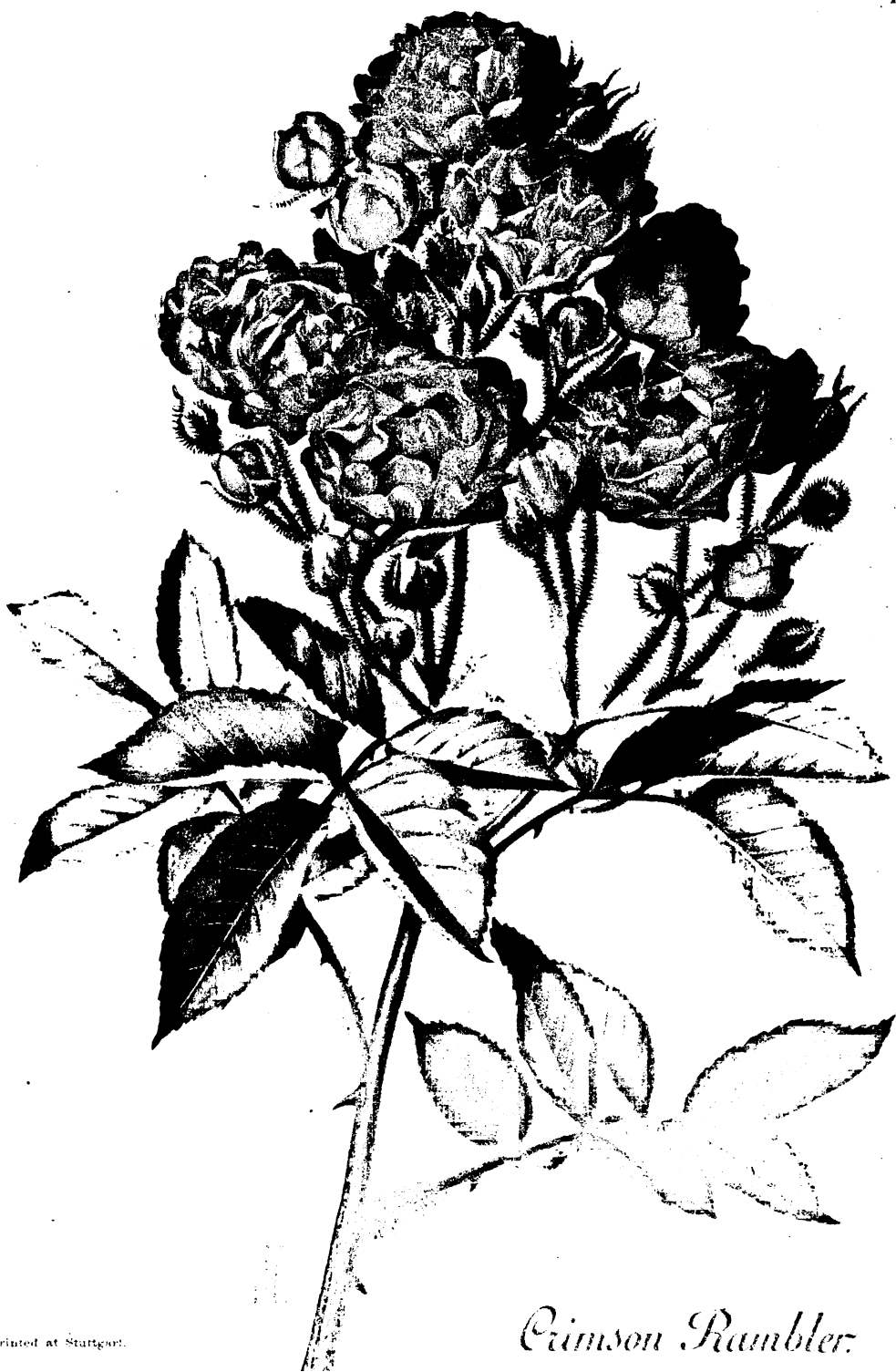
vines, &c., or with old paper envelopes, so as to prevent them possibly from being dried up. During rainy weather it is better to discontinue budding, as the entrance of rain-water into the cut is disadvantageous. When the buds which have been inserted the previous year have sprouted from the dormant eyes, and have made short healthy shoots, the wild growths from the stock are gradually—not all at once—removed, and especially suckers, as these would absorb some of the sap rising from the roots; and this should be directed exclusively to the use of the shoots from the choice buds.

Almost every beginner imagines that it would be particularly handsome and original in appearance if two quite distinct kinds of roses—for instance, a deep red one and a pure white one—were to be budded on one and the same stock, and they often wonder that this experiment is not frequently practised. In regard to such originality, we may remark that this experiment has been already made times without number, but has been nearly always a failure. This is owing to the fact that different kinds possess different degrees of growth. The stronger growing kinds therefore always outstrip the weaker growing ones, and cause the sap to flow more freely in their direction, and this is naturally detrimental to the growth of the weaker varieties.

Every lover of roses who attaches right value to his work will wish to know the names of his plants. He will therefore be well advised, when budding, not to trust to his memory, but in every case to attach a label, even if only a provisional one.

BUD GRAFTING.

This is a method of ennobling which is only likely to be seldom employed by amateurs, but which we must nevertheless not omit to mention. It is chiefly practised



in order to gain time, and to make good in the spring-time (say about April) any buddings that have failed, instead of waiting for the next budding season in July and August. The first essential—not altogether an easy one for the amateur to secure—is to procure suitable buds. Such are to be found for sale, indeed, in large nurseries in greenhouses. The amateur, however, can only make sure of them for this particular purpose by cutting off well-ripened shoots in the late autumn, and removing the leaves from them. They are then buried deeply in the soil to go through the winter, so that they may remain in a fresh condition without sprouting.

When employing this method, the bud is not pushed into a T-cut made in the bark, but, as may be seen from the annexed illustration (Fig. 10), is substituted for one that has been cut out of the stock. It is laid on to the stock and well bound with raffia or woollen thread. The whole place from which the bud has been taken is then carefully plastered over with grafting wax. It is rare that the shield of the substituted bud perfectly covers the cut surface on the wild stock. It will, however, be sufficient if one edge of the bark at least meets the other edge of bark (d), for the union is thereby ensured.

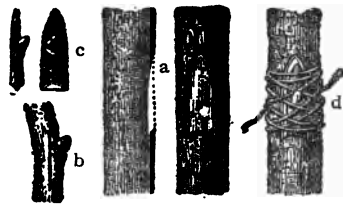


Fig. 10.

When such shield-buds are used, the leaf-stalk is usually absent, and it is therefore somewhat difficult to hold them. Hence, it is better when cutting out the buds to leave them a little longer above, so that one can hold the upper end, and afterwards cut off the tip of it with a sharp knife.

As may be seen from the above illustration, the under cut on the shield of the bud (b) is made slanting down-

wards, exactly in the same way as the cut on the stock (c), so that it fits in well and thus favours the union of both.

As the success of this method is somewhat in danger in the open air owing to the earliness of the season (April), the buds are protected by tilting over them a cylindrical glass jar about 8 inches long, the mouth of which is stopped up with moss.

We are not disposed to say that this particular method possesses any practical value for amateurs, as it is too troublesome and requires too much attention, and besides is too uncertain for practising in the open air.

BUDDING ON THE ROOT-STOCK OR "COLLAR."

All dwarf roses (bush roses and pot roses) which find their way into commerce are raised either from cuttings—of which we shall speak later on—or from buds inserted just above the root-stock or "collar" of the plant. Both these methods of propagation play a very important part in the cultivation of roses on an extensive scale in nurseries. They are not, however, largely practised by amateurs, one reason being that they are too troublesome and require too much attention; the other being that the choicest and most charming bush roses can be obtained at a very reasonable price from all large growers of roses. It has thus become the common practice for most amateurs not to supply their own wants in dwarf or bush roses, but to secure whatever plants they desire from nurserymen; these are chiefly in pots, and can be planted in the open air at any time from spring till autumn (see p. 21). As budding on the "collar" of the plant thus comes more within the realm of professional gardeners than of amateurs, we may confine our remarks on the subject to the following general information.

With the object in view of budding on the "collar" two-year old stocks raised from seed of the Briar or Dog Rose (*Rosa canina*) may be planted in well-prepared soil about March or April. In the following August such stocks will, as a rule, be sufficiently well advanced in growth to serve as good subjects for budding on the "collar." The "collar" may be defined as that part of the plant at which the roots cease and the stem commences, and is generally found, when properly planted, about 1 to 1½ inches deep in the soil. In order to be able to insert the bud at this point, the soil around the base of the stock must be drawn away, but should be replaced when the work is done. The existing growths on the stock are left unshortened or unpruned in autumn ; but all may be removed in spring save one or two, which are to serve for drawing the sap upwards from the roots. For the protection of plants raised in this way, it will suffice to have the soil brought up to them in little mounds.

PROPAGATION FROM CUTTINGS.

This method is freely practised in great establishments to secure large numbers of the most favoured bush or pot roses. It is also employed for increasing valuable novelties of which the nurseryman can only secure a large number in a short time by this means. It is from cuttings that "own-root" roses are raised, that is to say, roses which stand on their own roots and not upon those of a wild stock. These plants possess the advantage of having no suckers arising from the roots of a wild stock.

The amateur who has neither a greenhouse nor a hot-bed at his disposal, would find this method of propagation full of difficulty, even if practised in a room. We will therefore confine ourselves, in accordance with

the aim of this volume, to explaining the most important methods of raising plants in this way.

The most suitable time to take cuttings of roses is in the months of June till August, or, in cases when one has grown the plants in greenhouses, from February till May. In the latter case, a suitable propagating house or hot-bed is indispensable ; whilst during the summer months cuttings from roses in the open air may be rooted in cold frames.

The soft-wooded kinds of roses are more suitable for raising from cuttings than those with hard wood ; young, but not perfectly ripe wood, as a rule, being the best for cuttings. Each cutting should have at least two or three good eyes or buds. Close to the lowest of these, the shoot may be severed from the plant with a sharp slanting cut. The lowest leaf will be removed altogether from such a cutting, but the upper leaves are cut in such a way that the two lower leaflets are allowed to remain. This shortening back of the leaves is done with the object of checking evaporation of the nourishing sap from the tissues. Cuttings thus prepared are inserted about half-an-inch deep in a specially prepared bed in the propagating house, and may be placed about one inch apart from each other. A little later on, however, when they have developed tiny rootlets, they must be transplanted.

The soil prepared for cuttings should consist of clean river sand, with half of which sifted coal ashes or fibrous peat may be mixed. This is made into layers about three inches deep, pressed down firmly, and levelled with a flat piece of wood. For the favourable development of the cuttings, especially the formation of roots, a soil temperature of 70° to 75° F. is essential. Frequent sprinklings overhead—say six to eight times daily—must be given, so that the lower layers, which soon dry up with the rising heat, shall be kept in a moist

condition. After about a week or a fortnight the so-called "callus" begins to form, and precedes the development of the delicate roots. The favourable growth of the latter is easily recognised some time afterwards by the swelling of the buds and the pushing into growth. The time has now arrived when those cuttings that are well rooted should be carefully lifted and placed in small pots about 2½ inches across. These are filled with a sandy compost of turfy loam and leaf soil, after a few pieces of broken pots ("corks") have been placed at the bottom. If the cuttings are put into small pots in the first place, as is usually done in small establishments, it saves the trouble of transplanting them, and the plants may remain in the pots for several months until their growth has increased to such an extent as to make it advisable to place them in larger pots. The following spring all the cuttings grown in pots will be gradually hardened off in the open air, so that they may be ready for planting in the appointed places by the middle of May.

In large nurseries the raising of cuttings is also carried on throughout the whole winter, which renders special preparations and indefatigable attention necessary. But we need not dilate further upon this phase of the professional methods employed in trade establishments.

RAISING CUTTINGS IN THE OPEN AIR.

This is only a profitable undertaking with particularly strong-growing kinds like the Hybrid Perpetual or Remontant Roses, the Bourbons, and Climbing Roses. Cuttings of these are selected from ripe, but not too woody, shoots, and may be made from about the middle of October till the middle of November. The cuttings should be from 8 to 12 inches in length, and

inserted at once in well-prepared beds of rich, light, sandy soil. They should be inserted obliquely, and so deep that only two or three eyes remain above the surface of the soil. The latter is trodden down firmly and covered with about two inches of ashes, decomposed manure, tan, dry soil, &c., in order to protect them from being lifted up by the frost. One should not neglect to examine them frequently during the winter in case it should be necessary to press down again the layer of ashes, &c.

In the following spring the soil must be kept in a moist condition during dry weather, and during the summer months it should be loosened with the hoe and kept free from weeds. With such treatment, and under favourable conditions, one may obtain strong roses on their own roots, which may be transferred to the places designed for them the following autumn.



*William
Allen Richardson.*

PART IV
THE FORCING OF ROSES

PART IV

THE FORCING OF ROSES

OWING to the constant increase in the desire to have cut roses for almost every conceivable want—bouquets, wreaths, ball-room decorations, &c.—one must discover ways and means to supply roses in abundance to meet the great demand for them, not only during the months when they flourish in the open air, but practically at every season. The great advantage which a warmer climate offers for the production of roses has been utilised to the utmost degree in the south, especially on the Riviera, where the production and the commercially regulated despatch of forced roses has gradually developed into a truly enormous business. From the month of November till February the whole of Central Europe is supplied with splendid roses from the Riviera. They are mostly cut with long stalks, and, indeed, are sold at such reasonable prices that our nurseries are unable to cope with such an enormous supply from the open air, owing to the fact that they have to replace the sunheat and sunlight of the south by an expensive system of artificial heating. Notwithstanding this, a large number of beautiful cut roses are raised in artificial heat during the months mentioned, in Germany, France, and England, and find a ready sale in spite of the southern competition and the somewhat higher prices. The nurseries must, however, still reckon with the business in the south, and therefore meet it by taking the necessary precaution to arrange for the disposal of

the surplus supplies of beautiful cut roses at a time when the southern importations commence to decline—that is from the beginning of March until the time (June) that roses can be obtained in the open air.

The forcing of roses thus plays a very large and important part in professional gardening. And as our "Amateur Gardener's Rose Book" makes the pretension of being useful in a special manner to professionals and tradesmen, we must consider this subject a little more in detail. We may, however, remark that amongst amateur rose growers, and owners of private gardens, there are only a few who are in a position to occupy themselves personally with the troublesome details connected with the forcing of roses. We think, therefore, it will be more in accordance with the object of this volume if we confine ourselves to place before our readers the general outlines of the methods usually practised in the forcing of roses.

The forcing of roses in garden establishments is done in different ways, special attention being paid to the period of growth, and arrangements are also made to secure roses in blossom at certain periods apart from the normal one, so that there may be thus a good supply during the winter months and early spring. For this purpose a suitable greenhouse is necessary above all things, one in which the temperature and humidity of the atmosphere can be regulated according to circumstances. The glass of such greenhouses was formerly usually facing towards the south in order to make as much use of the sun's power as possible. In smaller nurseries to-day, such greenhouses are still to be met with having the glass facing the south, as they serve many purposes, and they are comparatively cheap to erect. Such are employed preferably for the forcing of pot roses, and, indeed, also for standard roses, as well as those budded low down on the collar, or bush roses raised from cuttings.

The forcing of suitable kinds usually commences in November. At first a temperature of about 50° F. is sufficient, but no harm is done if it goes a few degrees higher under the influence of the sun. The pots are placed on suitable stages or benches so as to be not more than four to six inches removed from the glass. The intervening spaces are filled in with moss or turfy fibre in order to keep the soil in the pots uniformly moist. Later on, as the buds begin to swell, the temperature is gradually raised to about 68° F., while the humidity is also kept uniform by watering and syringing with lukewarm water about 68° to 72° F. In dull weather the plants are syringed once a day, but two or three times when the weather is bright and warm. As soon as the roses have begun to develop their shoots strongly, they may be given weak liquid manure, or water in which horn shavings have been immersed, once a week to promote growth. When the flower-buds have developed, the syringe is not used. The temperature also is now reduced a few degrees in the greenhouse so as to prevent the roses from developing too quickly; for they are liable to be less perfect when rapidly forced than if they open more slowly.

When flowering is over, pot roses forced in this way should be transferred into larger pots with fresh nourishing soil, so that they may be again ready for forcing in the autumn.

In very large rose nurseries, where forcing is done on an extensive scale, special and much improved forcing-houses of different constructions have come into use in recent years. They are provided with a glazed span-roof, so that the roses may receive sunlight, not only from the south side, but also from overhead. In these span-roofed greenhouses, which occupy several acres in some places, the roses are not in pots, but planted out in a suitable piece of land which can be improved

each year by manuring, and be broken up afresh. In this way the rose plants continue in satisfactory growth, and for ten years or more supply a rich harvest of beautiful cut roses.

The accompanying sketches (Figs. 11 and 12) may

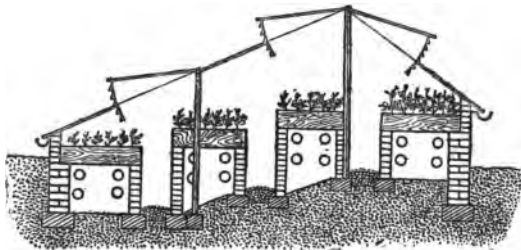


Fig. 11.

suffice to give the reader a general idea as to the arrangement of such span-roof houses. The art and method of forcing as practised in such span-roof houses is briefly

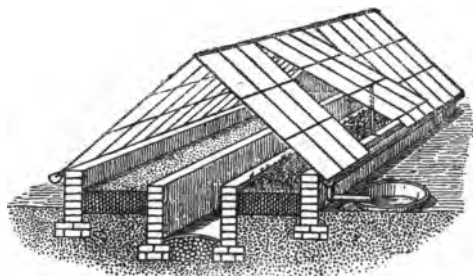
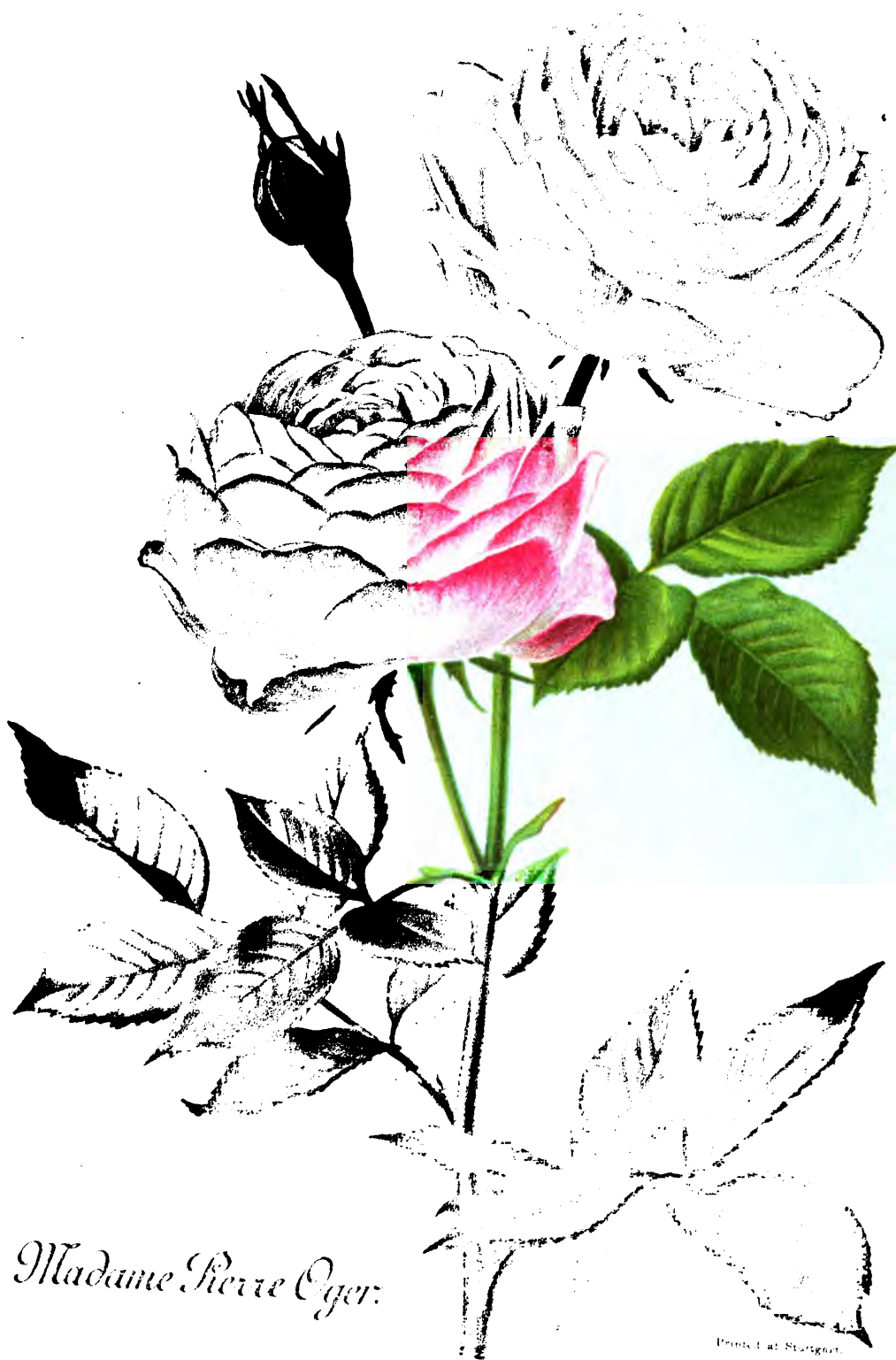


Fig. 12.

as follows : The roses intended for forcing, whether budded low down, or raised from cuttings, are planted in the autumn or in spring. During the summer months, when the lights are left open or removed altogether, they are treated and pruned in the same way as those in the open air. The lights are put on in November as



Madame Pierre Oger.

Printed at Stuttgart.

soon as winter begins to set in. According as one wishes to obtain early or late flowering roses, so may the temperature be regulated in the greenhouses by the heating apparatus. As, however, the best time for the sale of forced roses is not during the winter months, as mentioned before, but in the months of April and May, when the supply from the Riviera ceases, so should the forcing of roses be arranged accordingly, having this object in view—that is to say, the plants should be kept somewhat backward in the winter months. When spring weather appears particularly early, one may sometimes, even in March, reduce the heating of the greenhouses or dispense with it altogether, as the sun heat alone will supply sufficient warmth to secure the desired display of roses in the months of April and May. This, however, is obviously only possible when the plants—protected against the winter frosts in the greenhouse—have been properly cared for, and are well developed, in order to bring forth at this time their buds and blooms in great abundance.

In conclusion, we may call attention to still another method of forcing roses, which of course is only practised under special conditions, but, when successful, is then accompanied with a good deal of profit. This method of forcing, for which such kinds of roses as *Maréchal Niel*, *Niphetos*, *Bouquet d'or*, and *Reine Marie Henriette* are specially adapted, depends upon the kinds in question being “worked,” or budded on the stems of choice roses planted out in the soil of the greenhouse, upon the nature of which will depend the longer or shorter prosperity of the plants. If the soil is known from experience to be of a suitable and substantial nature, free from stagnant water and well drained, the conditions for many years’ good growth are present. One has then only to cut out every year the shoots that have already flowered, and to retain those of one year’s

growth which show promise of a rich display of flowers at the next period of forcing. Stephen Olbrich mentions, in his valuable book on roses (*Der Rose Zucht und Pflege*), an example of the extraordinary success of this method of forcing, as follows: "I know here in Zürich, in a half tumbled down old greenhouse, two Maréchal Niel Roses, the stems of which are about six feet high, and whose branches spread to an extent of over twenty square yards. In this space over 3500 faultless flowers were borne with a luxuriance and vigour that one seldom sees."

Experience has taught us that all kinds of roses are not suitable for forcing artificially in a similar manner; it would, however, occupy too much space if we were to indicate here by name all the kinds which the nurseryman prefers to use for forcing purposes. We therefore confine ourselves to an enumeration of the following particularly choice kinds that may be so grown, viz.: *Caroline Testout, Cathérine Mermet, Fisher Holmes, Horace Vernet, Jean Liabaud, Kaiserin Augusta Victoria, La France, Maréchal Niel, Mrs. John Laing, Niphetos, Perle des Jardins, The Meteor*, and *Ulrich Brunner*. It may also be of general interest to the amateur rose grower to have a list below of those kinds which are grown for preference every year on the Riviera in many hundreds of thousands, and which find their way into commerce during the winter as cut flowers. The kinds are:—*Anna de Diesbach, Marie von Houtte, Coquette de Lyon, Fiametta Nabonnand, Gabriel Luizet, Mrs. John Laing, La France, Kaiserin Augusta Victoria, Maman Cochet, Marie d'Orléans, Maréchal Niel, Papa Gontier, Paul Neyron, Reine Marie Henriette, Safrano*, and *Ulrich Brunner*.

PART V

**THE DIFFERENT FORMS OF CULTIVATED
GARDEN ROSES**

PART V

THE DIFFERENT FORMS OF CULTIVATED GARDEN ROSES

THESE are chiefly distinguished as follows : 1. Stem or Standard Rose Trees ; 2. Bush or Dwarf Roses ; 3. Pillar and Pyramid Roses ; 4. Weeping or Drooping Roses ; 5. Climbing or Trailing Roses ; 6. Hedge Roses ; and 7. Pot Roses. These different forms of roses are employed in a great variety of ways according to the space at one's disposal.

The standard forms are the most favoured and most generally grown in Germany. As a rule, they serve to embellish either large or small gardens, and are regarded with particular favour by most amateur rose growers. For this reason we have dealt with this particular group in this volume in great detail. As to the numerous sorts, we refer the reader to the "Alphabetical List of the choicest Garden Roses," at the end of the book.

Standard roses adapt themselves admirably for planting in straight rows or borders, or in large groups by themselves on lawns, or otherwise for planting on sloping mounds or banks. About five feet should be allowed between one standard rose and another, so that the heads of each may have space enough to develop and spread without coming in contact with its neighbour. If one has in view the laying out of a large garden specially for roses — what is called a "Rosery," or "Rosarium"—that will take many hundreds of standard roses, it is advisable for the amateur to engage

the services and secure the advice of an experienced landscape gardener, who would submit a sketch plan of the space proposed to be laid out, before the work was undertaken.¹

BUSH, OR DWARF ROSES.

These are raised partly by budding low down on the Briar stock (*Rosa canina*), and partly from own-rooted cuttings, and are mostly grown in pots by the trade (Fig. 13). Like the standard



Fig. 13.

roses, they are employed in gardens partly for the decoration of borders—often, indeed, one or two being placed between the standard roses—or to form borders to large beds and groups of shrubs, or entirely as groups by themselves on the grass. In the latter case, where round or oval beds are formed, it is well

to remember that the taller and stronger growing kinds are best for furnishing the centre, while the weaker growing kinds should be selected for the margins. Any practical gardener will be pleased to give the beginner useful advice on this subject. For the purpose, summer roses—those that flower only once a year, like the Cabbage or Centifolia Roses, the Austrian Briars Capuchin Roses, the Scotch Rose or Burnet (*Rosa pimpinellifolia*), and most of the Moss Roses may be

¹ Many different kinds of plans of rose gardens are to be found scattered about, especially in the pages of books written for professional gardeners, such as in Lebl's *Rosenbuch*, Berlin, 1895; Olbrich, *Der Rosen Zucht und Pflege*, Stuttgart, 1903; Otto's *Rosensucht*, 2nd Ed., by Stassheim, Berlin, 1890; and Betten, *Die Rose*, Frankfurt-on-Oder, 1903.



used. Approved varieties of Hybrid Perpetual (Remontant) Roses are more frequently used, because they flower more or less freely in the autumn. Amongst them are many varieties suitable for the purpose, but we need only mention the following: *Baroness Rothschild*, *Ambrogio Maggi*, *Magna Charta*, *Captain Christy*, *Merveille de Lyon*, *Général Jacqueminot*, *Gloire de Bourg la Reine*, *Madame Victor Verdier*, *Princess de Béarn*, *Souvenir de Spa*, &c. For dwarf rose groups, the Bourbons are specially suitable, such as *Souvenir de la Malmaison*, *Reine des îles de Bourbon*, *Mrs. Bosanquet*, *Louise Odier*, *Madame Pierre Oger*, &c.; likewise the well-known Monthly or Bengal Roses, like *Ducher*, *Hermosa*, *Cramoisi supérieur*, *Felleberg*, *Gruss an Teplitz*, &c. Amongst the Hybrid Tea Roses the following may be specially recommended for dwarf groups: *La France*, *Caroline Testout*, *Kaiserin Augusta Victoria*, *Augustine Guinnoisseau*, *Belle Siebrecht* (*Mrs. W. J. Grant*), *Madame Jules Grolez*, *Liberty*, &c. Amongst the Noisettes, *Bouquet d'or*, *Caroline Kuster*, *Aimée Vibert*, *Solfaterre*, &c.

Amongst the Tea Roses only the stronger and fairly hardy kinds of moderate growth are adapted for the purpose, such as *Grace Darling*, *Catherine Mermet*, *Francisca Kruger*, *Sombreuil*, *Duchesse Marie Salviati*, *Souvenir d'un Ami*, &c., while the strong-growing, climbing sorts that are difficult to train, such as *Gloire de Dijon*, *Maréchal Niel*, *Beauté de l'Europe*, and similar kinds, cannot very well be employed for making dwarf groups of roses. As edgings to dwarf groups of roses, the charming Polyantha Roses that have recently taken a hold of popular esteem, are to be recommended owing to their dwarf habit, and, above all, to their elegant clusters of blossom, which are freely produced well into the autumn. In order to secure a good supply of flowers from the plants, the shoots that have already borne blossom should be always cut back. The following are charming Polyantha varieties worthy

of mention : *Mignonette* (pink), *Paquerette* (white), *Perle d'or* (orange-yellow), *Etoile d'or* (citron-yellow), *Clothilde Souper* (white, with a bright rose centre), *Perle des rouges* (carmine).

PILLAR AND PYRAMID ROSES.

These very ornamental forms are specially adapted for large gardens, in which they can be planted here



Fig. 14.

and there as single specimens on lawns or in conspicuous spots along the pathways. The simplest form is that shown in Fig. 14, which represents a pillar rose 5 to 6½ feet high. To give it support and firmness, a strong stake, 6½ to 10 feet high, should be driven into the ground. It is better planted at the base of the stake in the form of a bush rose, so that as the shoots develop they may be trained vertically and fastened to the stake, and kept thus in the necessary form of a pillar rose by pruning. Of course only strong-growing, hardy kinds of roses, like those mentioned below, should be selected for training in the form of pyramids. As the result of experience, it is also recommended that own-root roses should not be selected; only those that have been budded low down on the Briar stock (*Rosa canina*), because the latter last much longer. They should be planted just deep enough to cover the point of union with an inch or two of soil. This has the advantage of causing roots

to develop from the budded portion itself, upon which new buds form and throw up shoots, so that the bush does not become bare at the base ; on the contrary, it continues to send up new shoots if those on the main stem have died down or have been quite killed by severe cold.

Pyramid roses are treated exactly in the same way as pillar roses when planted. In order, however, to develop a pyramid that spreads out well beneath and tapers towards the top, it is necessary to fix up a stout stake to which the growths may be fastened. With this object in view, stout wooden pegs are driven into the ground, about sixteen to twenty inches away from the central stake. From these, wires are strained so that they meet together on top of the stake, to which they are fastened, as shown in Fig. 15. It depends, of course, upon the owner of the garden whether the

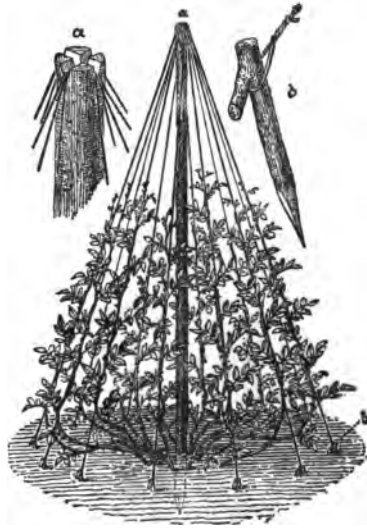


Fig. 15.

strictly pyramidal form is maintained, or whether he will adopt a somewhat freer form of growth, so as to permit some of the flowering shoots to project beyond the prescribed limits. As a rule, the Hybrid Perpetual (Remontant) Roses, owing to their regular growth, are not particularly well suited for growing as pyramids—at least, one can only expect to train them to a modest height. Amongst the best strong-growing sorts may be chosen : *Madame Victor Verdier*, *Jules Margottin*, *John*

Hopper, Fisher Holmes, Mrs. John Laing, Ulrich Brunner, fils, &c. Amongst the Tea Roses : *Gloire de Dijon*, and closely related kinds like *Madame Bérard, Kaiser Wilhelm, Belle Lyonnaise, &c.*, may be regarded as most suitable. In the first rank among the Hybrid Tea Roses are : *Reine Marie Henriette, William Allen Richardson, and Bouquet d'or*. Most of the climbing roses are particularly suitable as pyramid roses, especially those fairly hardy kinds like *Madame Sancy de Parabère, Crimson Rambler, and Euphrosyne*.

WEeping ROSES.

In connection with this name, one associates those forms of high-stemmed roses, the shoots of which hang down like those of the weeping willow, weeping ash, &c., thus forming a kind of umbrella, as shown in Fig. 16. Well-grown weeping roses produce a particularly picturesque appearance during the period of flowering. Solitary specimens are therefore frequently planted on lawns as centre-pieces to round beds, and with peculiar appropriateness as a refined ornament to graves. In order to obtain weeping roses, particularly strong and tall-growing stocks of the Briar, about $6\frac{1}{2}$ feet high, are selected and budded near the top. When possible, several buds—say, three to five—are inserted close to-



Fig. 16.

gether, some indeed in the bark of the main stock itself, some on the strong side shoots, as near as possible to the main stem, if such are conveniently placed. The

buds are inserted in July and August in a dormant condition, so that they first commence to grow the following spring. The drooping form of the shoot is then assumed naturally if buds of the suitable hardy kinds have been inserted. In the first place, the best sorts for the purpose are strong-growing climbing roses, such as *Beauty of the Prairies*, *Madame Sancy de Parabère*, *Crimson Rambler*, *Rubin*, &c. Such Noisette Roses as *William Allen Richardson*, *Bouquet d'or*, *Aimée Vibert*, &c., may also be trained as weeping roses, as well as a few vigorous Tea Roses like *Gloire de Dijon*, *Belle Lyonnaise*, &c.

So far as the treatment of weeping roses is concerned, it should be noted that they require but little pruning—indeed none at all during the first two years—and one should confine himself simply to removing the smaller shoots in the centre of the heads.

Owing to their form, weeping roses are rather difficult to protect during the winter, although protection is scarcely necessary with the hardy varieties. If it is desired, however, to be on the safe side, and to protect the tender shoots before the approach of severe winter frosts, then, in late autumn, the head of the rose should be enveloped in pack-cloth, coarse canvas, or some such material. If the stems can be bent down to the ground, it will then be sufficient to freely cover the heads with fir branches, mats, or pack-cloth.

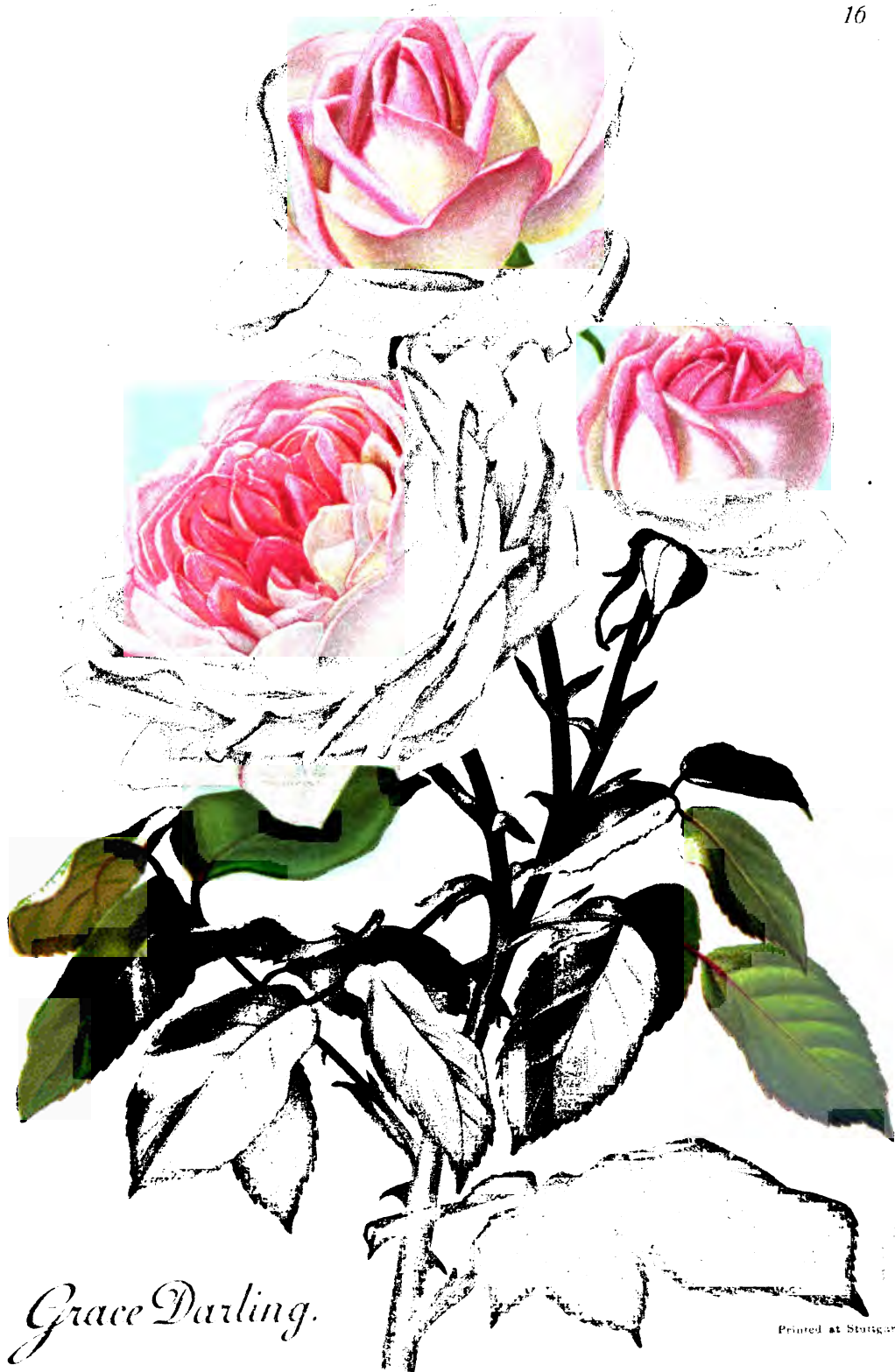
CLIMBING OR TRAILING ROSES.

Owing to their particularly vigorous, long-growing shoots, these are peculiarly well adapted for covering great spaces, and thus for adorning fences, walls, the sides of pathways, verandahs, summer-houses, arbours, &c. As they often develop growths 10 to 12 feet in length in the course of a year, they are readily con-

verted into garlands and archways, which may be formed by wires to which the shoots are fastened and trained out.

As a rule, climbing roses are remarkable for their freedom of growth in almost any kind of soil or situation; hence many of them may be planted in shady places where standards or bush roses would not flourish. Unfortunately they flower but once during the season, and as many of them are sensitive to severe winter cold, they are therefore unsuitable for bleak localities. Several of those charming and luxuriantly growing kinds from the south (*e.g.* the Riviera), such as the white and nankeen-yellow, extremely pretty little spring roses of the Banksian group, do not flourish in the open air in Central Europe, and can only be grown and wintered in greenhouses in Germany. There are, however, quite a number of hardy, or almost hardy, kinds, which are generally grown in Germany, and constitute a charming feature of our gardens. Amongst these, *Madame Sancy de Parabère*, *Crimson Rambler*, *Rubin*, *Himmelsauge*, &c., are valuable hardy sorts. In addition to these we may mention that a good many of the best climbing roses are also referred to and briefly described in the "Alphabetical List." Although not really climbing roses, such kinds as *Setina* (a strong-growing, pink, Monthly Rose) and *Reine Marie Henriette* (a fiery, cherry-red, Hybrid Tea Rose) may be grown as such, on account of their vigorous lengthy shoots.

In order to secure a charming effect with the clusters of flowers produced by climbing roses, they should be planted fairly close together—about three or four plants to a square yard. The shoots should be cut back soon after the flowers are over in summer, that is to say, they should be shortened back slightly. In the spring, however, the shoots are left unpruned, so that all the bloom-buds upon them may reach the flowering stage.



Grace Darling.

HEDGE ROSES.

If one understands by a rose hedge only a dividing line, for example, between the flower garden and the kitchen garden, even for this purpose those kinds mentioned on p. 89, as bush roses, may be employed. (See also Japanese Roses (*Rosa rugosa*) in the chapter on the "Classification of Roses," p. 5.) If on the other hand it is desired to have hedges of roses, similar to those of whitethorn, privet, &c., to form an impenetrable barrier against men and animals, then there are only certain kinds of the Scotch Rose (*R. pimpinellifolia*) on its own roots suitable for the purpose. When planted close together, these form good thick hedges that can be easily kept in proper shape by pruning. They produce their white or pink flowers early in the season in great abundance, and form a charming spectacle.

GROWING POT ROSES IN ROOMS.

There are many lovers of roses who, with no garden at all at their disposal, will not willingly give up the possession of a flowering rose tree. In such cases window-boxes, fronts of verandahs, and such-like places serve as possible spots in which one may be able to accommodate a larger or smaller number of pot roses, to cultivate them, and bring them into blossom in the spring. As there is usually some attraction in doing this, the amateur is consequently advised to procure some pot roses from the nurseryman, taking care to get a selection of healthy and vigorous plants. The most suitable are two-year-old plants that have been budded on the Briar, and that have already been once moved out of small pots and placed into somewhat larger ones, with a good, strong, loamy garden soil. It

is not advisable to select very large pot plants at first, but later on, at the end of two or three years, the plants may be put into larger pots. So as to secure proper drainage of the water, a layer of potsherds or stones should be placed in the bottom of the pots beneath the soil.

If kept in the atmosphere of a room from one year's end to another, the roses would languish. They should therefore be placed in the open air, at least during the summer months, so that they may partake of the benefits of the sunshine, rain, and fresh air. If one has an opportunity of placing the pot roses in the shelter of a partially shaded part of a garden during the summer, this will still further promote their happiness.

The best time for potting or re-potting roses is about the end of October and during November. At this period all the leaves and immature shoots are removed, and the remaining strong growths are cut back to about two-thirds of their length. Somewhat later the pot roses are accustomed to the air of the room, in the meantime protecting them from the approaching frosty weather, especially in the open air, or putting them in an unheated place free from frost. If one, however, wishes to have pot roses in bloom at the awakening of spring (say in February and March), in that case the plants should be accustomed to the atmosphere of the room as early as December, placing them close to the window. Frequent waterings, and now and then a little liquid manure (made from chicken, pigeon, or artificial manures dissolved in water) will prove very useful in promoting flourishing growth and the development of flowers upon the pot plants.

About the end of April, when the flowers are over, the pot roses are removed from the rooms into the open air, where they are placed in shaded or half-shaded spots, and watered from time to time. If they can be

sheltered in a garden, as above recommended, then the pots should be sunk up to their rims in the soil, and have a layer of short cow manure placed over the surface, so as to keep the moisture uniform about the pots. One must not, however, discontinue watering from time to time, even under these conditions, especially in warm, dry weather.

As mildew so frequently makes its appearance on pot roses grown in rooms, one may effectually combat this fungus by dusting with flowers of sulphur. Aphides may be destroyed by repeatedly brushing the shoots with pure methylated spirit.

For growing in pots in rooms the most suitable roses are the bush forms (see p. 89) in approved varieties, and more especially the following: *Baroness Rothschild*, *Captain Christy*, *Général Jacqueminot*, *Ambrogio Maggi*, *Fisher Holmes*, *Jean Liabaud*, *La France*, *Caroline Testout*, *Mrs. Bosanquet*, *Grace Darling*, *Perle des Jardins*, &c.

PART VI
RAISING NEW ROSES

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RAISING NEW ROSES

How are new roses obtained? This question, which forces itself on every novice in the art of rose growing, may be answered by saying that the development of all new varieties of roses is brought about in two different ways :—

1. Through the spontaneous development of varieties without the influence of garden cultivation.

2. By artificial fertilisation, known as hybridisation, which takes place in such a way that by transferring the pollen from one particular sort to the stigma of another, the fructification of the latter is secured. Under favourable conditions the seeds which ripen, as the result of this fertilisation, produce new varieties of roses in which the peculiarities of both parents are more or less united, and a new and distinct type is often the result.

THE SPONTANEOUS ORIGIN OF NEW VARIETIES.

It is a well-known fact that many garden plants, such as Pansies, Dahlias, Chrysanthemums, for example, and many others, exhibit quite a peculiar inclination to vary or degenerate, or, in other words, to develop new varieties. From this we may conclude—judging from artificial fertilisation—that all kinds of conditions, decades of cultural variations, improvements in the soil, &c., play a part. Amongst those plants that vary

spontaneously may be reckoned the rose. A large number of new varieties owe their origin in a measure to accident, or to mysterious operations, which have not been influenced by garden culture to any extent, at least up till now. The usual method practised by French rose growers is to allow a particularly fine and perfect example of a choice rose to flower and ripen seeds, which are afterwards collected, carefully labelled, and sown. The great majority of plants raised in this way will be always sure to exhibit the same characteristics as the parent rose. Amongst the many thousands of such seedlings there appear, however, in quite inexplicable ways, a small number of plants, which go their own way, so to speak, while their flowers show a greater or less deviation in colour and form from the type. Should such new varieties be considered sufficiently distinct in the opinion of the astonished raiser, in order to make them of any value as novelties, he increases them from cuttings, and when enough stock has been obtained they are placed in commerce under new names.

ROSE "SPORTS."

New kinds are obtained with somewhat greater certainty, or more strictly speaking, they can be fixed, by taking advantage of the fact that sometimes an individual flower appears on a plant which deviates in a high degree from the regular character of the known variety. Such remarkable variations are universally known in gardening language as "sports." These rose "sports" appear quite unexpectedly—especially on old plants, without any one being able to explain the cause of their marvellous origin. Up to the present, all attempts to produce artificially the appearance of "sports" by means of variations of culture or ingenious combinations in budding (such as the binding together of the





two halves of different buds, &c.) have been attempted without success. From the first, therefore, we must recognise that accident is the master hand in the production of rose "sports." On the other hand, it is a fact that when rose growers perceive such "sports" with shooting buds, when they appear accidentally, advantage is taken of the fact to make sure of propagating them, chiefly by budding the best of the most prominent ones on the particular shoot, and in the following year by cuttings.

The number of new kinds of roses which have arisen by "sporting" is fairly large. Many of them are not well "fixed," and have been scarcely distinguishable from their parents from the first. Others, on the contrary, exhibit such remarkable and constant characteristics that they are fully entitled to lay claim to the distinction of being called "new varieties."

We may call attention to the following universally well-known kinds of roses which have arisen as the result of "sporting": *Merveille de Lyon* is a "sport" from Baroness Rothschild; *The Bride*, from Catherine Mermet; *White Maman Cochet*, from the flesh-coloured Maman Cochet; *Red Captain Christy*, from the bright rosy-pink Captain Christy; *Augustine Guinoisseau*, from La France, &c.

THE RAISING OF NEW ROSES BY ARTIFICIAL FERTILISATION.

This method is by far the most important and most successful. It has been practised for generations by numerous rose growers with indefatigable diligence and restless zeal, and the most remarkable successes have been obtained as a result. Garden lovers and amateur rose growers, who possess both time and patience, and are willing to make some sacrifices while

experimenting independently in this particular way, should take some interest in making themselves acquainted with the most important principles and practices which underlie artificial fertilisation. While in the case of spontaneous development of new varieties the fertilisation for the production of seeds on certain roses is left entirely to accident (such as insects, wind, &c.), the raiser prefers to confine artificial fertilisation within well-known limits, as he either crosses two different roses of the same group, or else two roses of different groups with one another.

In the first case the result from seeds saved from the most likely roses of the same group will be a cross to which both parents belong. In the second case new classes may originate, and the hybrids will be distinguished in trade catalogues as Hybrid Teas and Hybrid Perpetuals (or Remontant Roses.)

Thus the Tea Rose, *Souvenir de Pierre Notting*, for example, has been raised by crossing Maréchal Niel and Maman Cochet. The Hybrid Tea, *Belle Siebrecht* (or *Mrs. W. J. Grant*), originated by crossing La France and Lady Mary Fitzwilliam. The Hybrid Tea, *Madame Abel Chatenay*, resulted from a cross between Dr. Grill and Victor Verdier. The Hybrid Perpetual (Remontant) Rose, *Paul Neyron*, was evolved by crossing Victor Verdier and Anna de Diesbach. The rose *Soleil d'Or* was obtained from a cross between Persian Yellow and Antoine Ducher, and formed a new type, which is found in catalogues classed as a Hybrid Perpetual, and also under the name of *Rosa Pernetiana*.

It would be a mistake, however, to assume that raisers can produce a rose of a certain type at will simply by selecting suitable parents. As with all other kinds of plants inclined to vary, so with the rose there are numerous reversions—"throwings back"—in spite of the most ingenious selection of the parents. It thus

happens that the seedling produced as a result of crossing two good double roses may produce a less double, indeed, almost a single-flowered rose.¹

CROSSING OR HYBRIDISING.

This is accomplished by the raiser transferring, on a fine, dry, camel's-hair brush, the pollen of the rose which he desires to cross on to the stigma in the other rose on sunny days, having removed the stamens of the latter rose with a small scissors beforehand. This operation is performed to prevent the rose from being fertilised with its own pollen, in which case the artificial fertilisation or hybridisation would be frustrated. The stamens must be cut out before the pollen is ripe, as the ripened pollen adheres easily to the brush used in the operation, while unripe pollen on the other hand does not adhere to the dry brush. The object of fertilisation is secured by performing the work under glass, because the external influences of wind, insects, &c., are thus more readily controlled.²

As already stated, there are still many little troubles to be overcome by the raiser, such as failing to reach the object aimed at by artificial fertilisation, or that the desired rose produces no seeds whatever; or that any seeds obtained do not produce a new variety worthy of propagation.

A first-rate knowledge of the known kinds of roses to be found in commerce is, of course, essential, so that one may be able to distinguish and mark amongst the

¹ For the benefit of those amateurs who take more than ordinary interest in the origin of new kinds of roses, we have added the parentage at the end of the book in the "Alphabetical List of Roses." From these notes the reader will be able to recognise the influence which some remarkable kinds of roses have been able to exercise in the production of new varieties, such as *Jules Margottin*, *Victor Verdier*, *Général Jacqueminot*, *Gloire de Dijon*, &c.

² For the treatment of rose hips or seeds, see p. 54.

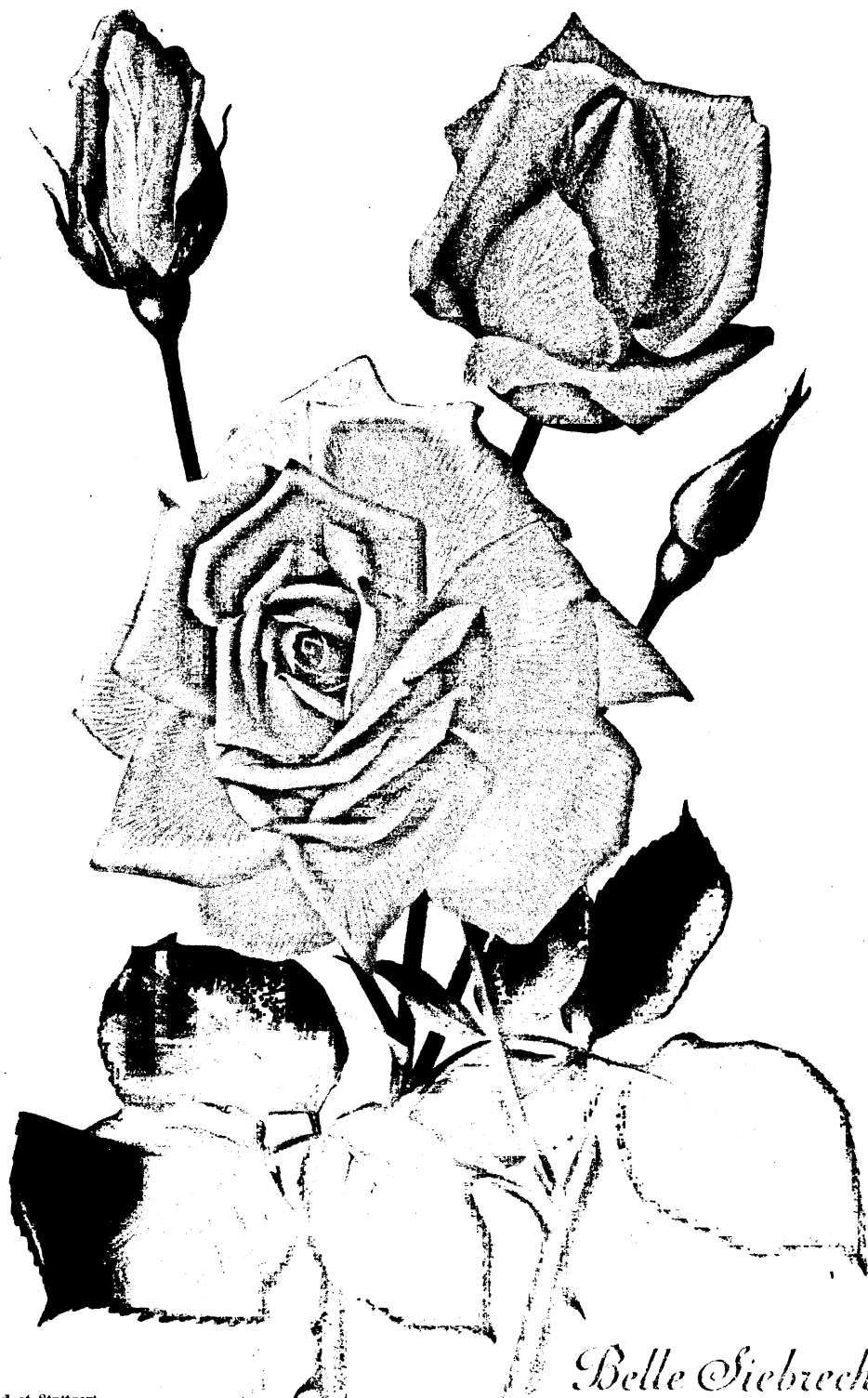
selected seedlings any of those that are new and worthy of increase. In addition to this, also, one must have a certain amount of moral courage, so that he may not, as Mr. H. B. Ellwanger says in his book on "The Rose," regard his geese as swans.

Unfortunately this impartial estimate seems to be lacking in regard to some of the products of many raisers, and complaints have been made in important quarters that far too many roses of little value, or already well known, are praised and placed on the market as "remarkable novelties."

This is, of course, to be deplored, not so much on account of the amateurs—who, indeed, can afford to wait until a praised novelty has been proved—but on account of the trade-growers, who, in the course of time, must bring out novelties every year.

The number of cultivated roses to be found in commerce is now so great that it is very difficult to produce one that is new in colour, habit, and character. As a matter of fact, thousands of seedling roses are grown on till they flower—a process that usually lasts from two to four years—with the object of finding amongst them at least one good and strikingly distinct variety.

We can scarcely conclude the present chapter without giving a few notes on the production of new roses. The late Shirley Hibberd, in the year 1880, published a catalogue of all the roses which had been introduced to commerce up till that time, and he enumerated 1478 varieties. In the same year Thomas Nietner's work on "The Rose and its History" (*Die Rose und ihre Geschichte*, Parey, Berlin, 1880), in which 5000 roses were described, appeared in Germany, and in Max Singer's *Dictionnaire des Roses* (Parey, Berlin) are to be found as many as 6000 sorts and varieties minutely described.



Belle Siebrecht. —

Since 1880 the production of new roses has increased considerably. In the catalogue of a large rose nursery lying before us, about 700 catalogue numbers or new sorts have been added since the year mentioned. Of course, besides these 700 new sorts, numerous other new varieties have been put into commerce during the past twenty-four years, and the number well exceeds 2000.

The numbers quoted for 1880—about 5000 to 6000 kinds of roses—are even now certainly too high, considering the increase since that period; as in the catalogues numerous similar, or scarcely distinct, kinds of roses appear under different names, and it would be difficult to distinguish more than 1500 or 1600 really distinct kinds of roses among them.

Owing to such an unnecessarily large number of sorts, it has been of great assistance, not only to the novice, but also to the experienced rose grower, that the German Rose Society has undertaken the task, through the votes of its members, to make a selection of those roses that are generally grown and admired.¹

In the list of roses at the end of the book will be found those kinds selected by the votes as being especially worthy of recommendation, and the amateur rose grower will not in any way regret if he contents himself with purchasing any of the kinds mentioned.

¹ Similar work has been done by the National Rose Society, England.
—J. W.

PART VII
ENEMIES OF THE ROSE



PART VII

ENEMIES OF THE ROSE

EVERY amateur rose grower has been forced to observe with sorrow the numerous and more or less dangerous enemies—partly animal and partly vegetable—to which his favourites are exposed, and which injure their growth, indeed often so much so as to threaten their destruction.

It may be accepted as a remarkable fact, capable of proof, that the more a plant is exposed to the attacks of different pests, the more miserable its growth becomes. From this the moral may be drawn, that, as far as possible, strong plants only should be raised and have their growth promoted by cultivation and intelligent care. They will then not only withstand the attacks of pests more easily, but will be less likely to be attacked by them.

It does not come within the scope of this volume to give a detailed account of all the enemies to be met with in growing roses. We must rather confine ourselves to referring to the most serious pests, and to give advice as to their destruction.

ENEMIES OF INSECT ORIGIN.

The most important of these are the insects which threaten our pets, and the most insignificant looking kinds are those that give the amateur rose grower most trouble.

At the roots the chief enemy is the grub of the well-known cockchafer, which, when present in large numbers, causes no small amount of damage, especially in rose nurseries, by gnawing away the roots.

The extermination of this pest is chiefly confined to digging up the soil round the plants and collecting as many of the grubs as possible. When large nurseries and rose gardens are seriously threatened with cockchafer grubs, the use of Naphthalin (22 lbs. to 220 lbs. of sandy soil), as well as the introduction of Carbon-disulphide into the soil (2 to 3 ozs. to the square yard) may be recommended.

The larvæ of different kinds of leaf-wasps are found in the stems of roses. They sometimes bore a hole in the cut surfaces of the old wood, where they change into the chrysalis state; and sometimes they penetrate the young shoots, which they cause to wither owing to the destruction of the pith. The presence of larvæ in the old wood may be recognised from the round hole on the cut surface and the decay of the pith. The larvæ may be destroyed by cutting back the decayed shoots as far as the healthy wood.

The young growths are also injured by different little weevils that lay their eggs in the sappy portions, which are soon brought to the withering stage by the larvæ within. These pests may also be destroyed in the same way—by cutting back the affected shoots.

To the enemies of the wood may also be added the bud-mite (the red maggot) which must be regarded as one of the most injurious pests. It is the maggot of an insect about one-eighth of an inch long, which lays its eggs on the spots where the buds have been inserted. At this point the maggot lives on the sap of the rose, and gradually penetrates deeper and deeper beneath the inserted bud, causing the latter to shrivel up with un-failing certainty. But not only is the bud destroyed;



Guss an Teplitz

the point at which the maggot has developed its fateful activity also becomes blighted as much as half the stem's thickness, and this must therefore be cut away beneath the spot where the unsuccessful bud has been inserted. No tying material affords sufficient protection against the insect laying its eggs in the buds. The only remedy promising any success against this pest is the careful and immediate smearing over of the budded portion with grafting wax.

The leaves and flowers are afflicted with a large number of insects, especially their caterpillars or larvæ. But serious injury from these is only to be apprehended when the pests appear in such numbers that they eat bare entire shoots or indeed the whole head of the bush. The amateur rose grower should be well prepared for those most vexatious larvæ that gnaw into the most promising flower-buds, and thus prevent the development of the blooms.

When the caterpillars or larvæ are situated on the leaves or shoots, they may then be easily picked off and destroyed, or they betray their presence by sticking the leaves together—mostly those at the tips of the young shoots bearing flower-buds. By crushing the leaves that are stuck together the maggots are also usually destroyed, whether it be the maggot of the small night-frost spinner in the early stage or that of the rose leaf curler just issuing from the cocoon.

The rose lover often notices the depredations that have been carried out on his favourites, without, however, being able to distinguish the marauders with the naked eye; in such cases he spreads a cloth or an open umbrella beneath his roses, which he knocks several times to secure them. The knocks or blows may be given by the hand or a stick, and should be sharp ones, so that sudden shocks or jerks will be given to the plant. The best time for this operation is

early in the morning. Not only will the caterpillars and larvæ, but also the leaf-eating wasps and chafers—especially the different kinds of small weevils—be secured as booty by this proceeding.

A considerable amount of trouble is caused to the amateur by the numerous aphides or green-fly which settle on the tips of the shoots, and increase into colonies with incredible rapidity.

They are best banished with tobacco—either in the form of a strong decoction that may be brushed over the insects, or in the form of fine powder (such as may be obtained from tobacco and cigar factories at a cheap rate) which is dusted over the shoots that are attacked. The shoots should be sprinkled over with water at first so that the tobacco powder may adhere to them better.

When roses are forced under glass they are not exempt from the attacks of two troublesome glass-house pests—thrips and red spider. Thrips are black insects about one-sixteenth of an inch long, while the red spider (known to German gardeners as "Webermilbe") belongs to the mite family, and in a full-grown state only attains a length of half a millimetre—about one-fiftieth of an inch. Both pests injure the leaves by biting them, thus causing them to wither and fall off. They may be combatted by fumigating the greenhouses and dusting the foliage with tobacco or insect powder, as well as by syringing the plant attacked with cold water. Free ventilation of the houses is also unfavourable to the development of these pests.

Before concluding our remarks on the insect enemies of the rose we must not forget to call attention to those auxiliaries which aid the amateur in their extermination.

Amongst the most important are the ichneumon flies, slender lively insects, which assist by depositing their eggs by means of an ovipositor in the bodies of the caterpillars and maggots. The eggs develop into larvæ

in the bodies of the caterpillars, which are ultimately devoured by them.

Next in importance are the little lady-birds, the lace-wing flies, and some of the syrphidæ, which lie in wait for the larvæ of the aphides and consume them. The lace-wing flies are delicate insects, usually green or yellowish in colour, which look exceedingly curious owing to their disproportionately large arching wings. The syrphidæ (Schwebefliegen) are recognised by their peculiar flight. At one moment they may be observed hovering over a spot in such a way that the movement of the wings is scarcely discernible; at another, if disturbed, they dart with arrow-like flight through the air. When motionless the wings lie upon the body.

ENEMIES OF VEGETABLE ORIGIN.

Amongst these are to be noted the different kinds of parasitic fungi which attack roses, and of which from twenty to thirty species are known. Fortunately, fungoid pests do not, as a rule, interfere in large numbers with the culture of roses, as in the case of vines and fruit trees with such well-known diseases of the leaf caused by *Peronospora*, *Oïdium*, and *Fusicladium*.

The three best known and most widely distributed fungoid diseases of roses are mildew, rust, and leaf-spot. If the lover of roses wanders through his garden in the autumn he may notice a kind of white mould on the surface of the leaves of his rose plants. This is the so-called mildew or rose-mould. His gardener, who perchance has accompanied him, will perhaps tell him that the disease has been produced by cold, fog, or mist. This is correct to a certain extent, inasmuch as the growth of the fungus is associated with the sudden falling of the temperature, and is favoured by the prevalence of damp, cold weather. The appearance of the

fungus is due to its spores, which had firmly attached themselves to leaves and twigs of the roses, and under favourable conditions developed so quickly that the whole rose was soon attacked. In the autumn the attacks of the fungus on open-air roses are not of great importance, because, the blossoms having faded, the shoots that have been attacked will be cut back in the course of the winter-pruning. The circumstances are altered, however, if the fungus appears in spring or summer. It then becomes necessary to take immediate steps to prevent the disease from spreading, by means of suitable remedies.

As already stated, cold and damp weather favours the growth of the fungus. It thus happens that buds inserted in winter usually suffer from its attacks if they are brought into the open air from the protection of the greenhouse. The pustules that appear also on certain kinds of roses, such as some Tea Roses and Hybrid Teas, supply a particularly favourable source of nourishment to the fungus.

The best remedy for the extermination of the fungus, as well as for its prevention, is finely powdered sulphur, with which the roses attacked should be dusted over. This object is best secured by performing the operation during bright sunshine. The sulphur may be distributed by means of a specially constructed bellows, so that the under surface of the leaves can be much better dusted over than was formerly the case when mops or brushes were used. The previous sprinkling of the foliage with water in this case would be rather harmful than otherwise.

When forcing roses in greenhouses, the sulphur will be applied before the fungus shows itself, and thus its appearance will be prevented. This is also advisable with those roses grown in the open air that are peculiarly liable to being attacked with the fungoid diseases mentioned.



Rose-rust is recognised by the deep orange-yellow pustules that settle on the leaf-stalks and stronger veins of the leaves. After a short time these pustules assume a darker colour, and a dark powder-like substance is dispersed by them. This powder-like substance is composed of the spores of the fungus, which will be carried on to other leaves by the wind, and thus the disease is spread. As soon as ever the appearance of the fungus is noticed, the affected leaves should be cut off and burned.

The "leaf-spot" develops brownish-black streak-like spots on the upper surface of the green leaves, and causes them to fall. The denuded plant is then unable to bring its leaf-buds to their full development. When this injurious fungus appears, it may be checked by syringing the plants with a solution of sulphate of copper, or liver of sulphur. A single syringing affords but little protection; it must be repeated several times, and be commenced as early as the middle of June.

[A good fungicide may be made by dissolving 1 lb. of sulphate of copper (or blue-stone) in 10 gallons of warm water. To this should be added 1 lb. of quicklime, and $\frac{1}{2}$ lb. to 1 lb of soft soap, which have already been boiled together in about a quart of water. The whole should be thoroughly mixed and kept well stirred whilst spraying the roses.

One ounce of liver of sulphur to $2\frac{1}{2}$ gallons of water, and a handful of soft soap, also make a good solution for checking fungoid pests.—*J. W.*]

ALPHABETICAL LIST

OF THE CHOICEST KINDS OF ROSES

EXPLANATION OF ABBREVIATIONS

T.R. = Tea Rose.

N.R. = Noisette Rose.

Hyb. T.R. = Hybrid Tea Rose.

Cl. R. = Climbing Rose.

H.P. = Hybrid Perpetual or Remontant Rose.

N.B.—An asterisk (*) is placed before the names of the varieties
added by the Translator.

Abel Carrière, *H.P.* (raised from "Monsieur Boncenne" by E. Verdier, 1875). Large, full, velvety purple and violet, with darker reflections. Centre fiery red.

Abel Grand, *H.P.* (raised from "Jules Margottin" by Damaizin, 1866). Large, full, blush pink, glossy, fragrant.

Adam, *T.R.* (raised by Adam, 1838). Large, full cup-shaped flowers, drooping, pink and white. *Syn.* "Souvenir d'un Ami."

Adrienne Christophle, *T.R.* (raised by Guillot fils, 1869). Medium size, full, apricot-yellow, shaded with pink, sometimes dark yellow.

Aennchen von Tharau, *Cl. R.* (raised from "Alba Rosa" and "Ayrshire Rose" by Geschwind, 1886). Flowers medium size, very full, of the Cabbage or Centifolia type, creamy white, with flesh-red centre.

Aglaia, *Cl. R.* (raised from "Polyantha sarmentosa" and "Reve d'or" by Peter Lambert, 1896). Small bright greenish-yellow flowers in large full clusters; vigorous in growth.

Aimé Vibert, *N.R.* (raised by Vibert in 1828; a sport from "Repens"). Flowers pure white, medium size, full, freely borne in umbel-like clusters. Buds tinted with red. Foliage shining, deep green. Branches springing up from the base, hence this rose is particularly suitable for planting on graves.

Alfred Colomb, H.P. (raised from "Général Jacqueminot" by Lacharme, 1865). Large, full, beautiful globular shape; brilliant fiery red, sweet-scented, hardy, and free-flowering; good autumnal.

Alfred K. Williams, H.P. (raised by Schwartz, 1877). Large, full, imbricated, bright carmine red. Free-flowering, especially towards autumn.

***Alice Graham, H.T.** (raised by A. Dickson & Sons, 1903). Flowers very large, ivory white, tinted with salmon, produced freely and continuously; vigorous growth.

***Alice Lindsell, H.T.** (raised by A. Dickson & Sons, 1902). Flowers very large, of fine form, creamy white with a pink centre; vigorous growth. Awarded the Gold Medal of the N.R.S.

***Alister Stella Gray, N.R.** (raised by A. H. Gray, and sent out by Paul & Son, 1894). Flowers pale yellow, deeper in the centre, borne in clusters. An excellent rose for pillars, arches, &c.

Alphonse Karr, T.R. (raised from "Duchess of Edinburgh" by Nabonnand, 1879). Large, full, imbricated, pale purple, crimson-red, pale in the centre. Vigorous, free-flowering, sweet-scented.

Alphonse Soupert, H.P. (raised from "Jules Margottin" by Soupert and Notting, 1888). Large, full, bright pink, early flowering, fragrant; fairly hardy.

Alsace Lorraine, H.P. (raised by Duval, 1879). Large, full, regular form, velvety dark red, one of the darkest coloured.

Amateur Teyssier, T.R. (raised from "Souv. de Mdme. E. Verdier" by Gamond, 1899). Deep yellow.

Ambrogio Maggi, H.P. (raised from "John Hopper" by Pernet, 1879). Very large and full, globular, beautiful bright pink.

American Beauty, H.P. (raised by G. Bancroft, 1885). Very large and well filled. Flowers deep carmine pink, distinct, fragrant.

André Schwartz, T.R. (raised by Schwartz, 1884). Medium size, full, fine form, deep carmine red, free-flowering.

Anna de Diesbach, H.P. (raised from "La Reine" by Lacharme, 1859). Very large, cup-shaped, bright carmine pink, shaded with silvery white.

Anna Marie de Montravel, P.R. (raised from "Polyantha alba plena" and "Mdme. de Tartas" by Veuve Rantbeaux et Debreuil, 1880). Flowers very small, well-filled, pure white, with lily-of-the-valley fragrance, borne in very large clusters.

***Anna Olivier, T.** (raised by Ducher, 1872). Flowers large and full, fine form, creamy buff, flushed with rose; charming in bud; vigorous growth.

Antoine Quihou, H.P. (raised by Eug. Verdier, 1897). Large, full, deep velvety chestnut-purple, fragrant, free-flowering.

***Antoine Rivoire, H.T.** (raised from "Dr. Grill" and "Lady Mary Fitzwilliam" by Pernet-Ducher, 1895). Flowers large and full, fine form, creamy white with orange-yellow centre; vigorous growth.

Archiduchesse Maria immaculata, T.R. (raised from "M. Lambard" and "Socrates" by Soupert and Notting, 1886). Large, well-filled, light brick-red, with brighter salmon colour; coppery red in the centre. Free-flowering and fragrant.

***Ards Pillar, H.T.** (raised by A. Dickson & Sons, 1902). Flowers large, full, cupped, rich velvety crimson; vigorous growth; a fine pillar rose.

***Ards Rover Cl. H.P.** (raised by A. Dickson & Sons, 1894). Flowers globular, deep crimson. A fine pillar rose.

Augustine Guinoisseau, Hyb. T.R. (sport from "La France;" Guinoisseau, 1890). This is known as the "White La France." Flowers large, full, beautiful light pink, erect; growth moderately vigorous. Branches slender, buds small.

***Ayrshire.** These are forms of *Rosa arvensis*. They are very vigorous in growth and extremely hardy, with long trailing stems, and clusters of flowers. There are several varieties useful for hedges, pillars, &c., such as *Alice Gray* (white), *Bennett's Seedling* (white semi-double), *Dundee Rambler* (white and pink), *Ayrshire Queen* (reddish purple), &c.

Banksia, Cl. R. (introduced from China, 1807). Flowers small, full, blooming freely in panicles, is used in white and yellow varieties as spring roses (March and April) in the south, chiefly the Riviera. Does not flourish in the open air in Germany.

***Bardou Job, H.T.** (raised by Nabonnand, 1887). Flowers semi-double or single, bright glowing crimson, borne in great profusion.

Baron de Bonstetten, *H.P.* (raised from "Général Jacqueminot" by Liabaud, 1871). This is synonymous with "Mon-sieur Boncenne," which see.

Baron Gonella, *Bourbon R.* (raised from "Louise Odier" by Guillot père, 1859). Large, cup-shaped, full. Flowers light silvery pink within, the petals edged with violet-rose outside.

Baronne de Maynard, *N.R.* (raised by Lacharme, 1865). Medium size, full, flat, pure white, vigorous growth, free-flowering.

Baronne Henriette de Loew, *T.R.* (raised by Nabonnand, 1889). Large, full, beautiful pale pink, shaded with golden yellow in the centre, pink outside; free-flowering.

Baroness Rothschild, *H.P.* (raised from "Souv. de la Reine d'Angleterre," by Pernet, 1868). Large, loosely filled, charming light pink shaded with white. Growth short-jointed, erect. A beautiful rose, but almost scentless.

Beauté de l'Europe, *T.R.* (raised from "Gloire de Dijon," by Gonod, 1881). Very large, well filled, deep yellow, similar to *Gloire de Dijon*, but larger and more beautiful. Very vigorous in growth, moderately free-flowering.

Beauty of the Prairies, *Cl. R.* (raised by Feas, 1843). Large, cup-shaped, very double, bright rose-red, each petal having a white stripe in the centre. Flowers freely and continuously in large clusters.

Belle des Jardins, *Striped R.* (raised from "Perle des Panachées" by Guillot fils, 1872). Medium size, double, purple-red, with violet-carmine, blotched and streaked with white.

Belle Lyonnaise, *T.R.* (sport from "Gloire de Dijon," Levat, 1869). Large or very large, very full, cup-shaped, canary-yellow. Very vigorous in growth. A beautiful sweet-scented rose.

Belle of Baltimore, *Cl. R.* (raised by Feas, 1843). Medium size, very double, splendid form, milk-white, often shaded with flesh colour, flowering in clusters. Particularly suitable as a weeping rose.

Belle Siebrecht (or Mrs. W. J. Grant), *Hyb. T.R.* (raised from "La France" and "Lady Mary Fitzwilliam" by A. Dickson & Sons, 1895). Large camellia-like flowers, bright pink. Beautiful long buds. See coloured plate, 18.

***Ben Cant**, *H.P.* (raised from "Victor Hugo," by B. R.

Cant & Sons, 1902). Flowers large, fine form, deep crimson, flushed and veined in the centre; fragrant. Awarded the N.R. Society's Gold Medal.

Bessie Brown, *H.T. (raised by A. Dickson & Sons, 1889). A fine rose, with globular creamy white flowers of great size and fine form. Awarded the Gold Medal of the N.R.S.

Blanche Lafitte, *Bourbon R.* (raised by Pradel, 1851). Medium size, full, somewhat drooping, flesh colour shading to white, flowering freely in clusters.

Blanche Moreau, *Moss R.* (raised from "Comtesse de Murinais" and a white "Damask" rose by Moreau-Robert, 1880). Large, full, good habit, and well mossed. Flowers pure white in clusters until the autumn.

Blush Rambler, *Poly. R. (raised by B. R. Cant & Sons, 1903). Flowers like apple-blossoms of a soft blush pink colour, and borne in large clusters. Awarded the Gold Medal of the N.R.S.

Boadicea, *T.R. (raised by W. Paul & Son, 1901). Flowers large, full, elongated in form, pale peach colour, tinted pink and violet, with rose in the centre.

Bougère, *T.R.* (raised by Bougère, 1832). Large, cup-shaped, full, hydrangea pink in colour, vigorous, free-flowering.

Boule de Neige, *N.R.* (raised from "Blanche Lafitte" by Lacharme, 1867). Medium size, full, cupped. Flowers white, tinted with greenish-yellow. Blooms freely in clusters. A good autumnal rose.

Bouquet d'Or, *N.R.* (raised from "Gloire de Dijon" by Ducher, 1873). Flowers large, full, cupped, becoming flattish, deep yellow with a coppery centre. Vigorous growth. Exquisite when half open.

Bridesmaid, *T.R. (a sport from "Catherine Mermet," May 1893). Similar to its parent, but of a deeper bright clear pink colour.

Camille Bernardin, *H.P. (raised by Gautreau, 1865). Flowers large, full, fine form, light crimson, paler on the edges; free in growth.

Camoëns, *Hyb. T.R.* (raised by Schwartz, 1882). Medium size, moderately full, bright chinese pink. Free-flowering, very effective, vigorous.

Captain Christy, *H.T.* (raised from "Victor Verdier" and "Safrano" by Lacharme, 1874). Very large and very full, short-jointed, erect, delicate pink, with deeper centre; cup-shaped, becoming flatter.

Captain Christy, Red, *H.T.* (sport from "Captain Christy," Perrier, 1898). Similar to the preceding parent sort in growth, but having flowers of a charming deep pink shading to carmine-red.

Captain Hayward, *H.P. (raised by Bennett, 1893). Flowers long, pointed, beautiful form, scarlet-crimson, fragrant; likes partially shaded places.

Cardinal Patrizzi, *H.P.* (raised from "Geant des Batailles" by Trouillard, 1857). Medium size to large, well-filled, beautiful form, brilliant red, shaded with brownish-purple. Growth moderate. One of the most beautiful of the old and tried dark *H.P.*'s.

Caroline Kuster, *N.R.* (raised from "Le Pactole" by Pernet, 1872). Large full, cupped, citron-yellow passing into white.

Caroline Testout. See "Madame Caroline Testout."

Catherine Guillot, *Bourbon R.* (raised from "Louise Odier" by Guillot fils, 1861). Large, full, beautiful form, bright purple-pink. Vigorous growth; particularly liked for a bush rose.

Catherine Mermet, *T.R.* (raised by Guillot fils, 1869). Large, very full, cupped, with a high centre, pinkish flesh-colour. Fragrant.

Catherine Soupert, *H.P.* (raised from "Jules Margottin" by Lacharme, 1879). Large, cup-shaped, full, whitish-pink. Should not be cut back too short.

Cécile Brunner, *Poly. R.* (raised from "Polyantha" and "Mdme. de Tartas" by Veuve Ducher, 1881). Small, full, flowering in clusters, bright pink on a yellow ground.

Céline Forestier, *N.R.* (raised by Trouillard, 1842). Large, full, flat habit, pale yellow with a darker centre. Flowers freely in clusters.

Centifolia communis (introduced from the East). Large, good habit, well-filled, cupped, rose-red, deeper in the centre. Distinguished by its unsurpassed fragrance. The "Cabbage Rose."

Charles Darwin, *H.P.* (raised by Laxton, 1879). Large, full, cup-shaped, brownish carmine-red.

Charles Lamb, *H.P.* (raised by W. Paul & Sons, 1885). Large, full, pale bright red, flowering freely from summer till autumn. Flowers drooping.

Charles Lefèvre, *H.P.* (raised from "Général Jacqueminot" and "Victor Verdier" by Lacharme, 1862). Large, well-filled, cup-shaped, bright carmine-red, smooth-wooded, free-flowering; very fragrant.

Charlotte Gillemot, *Hyb. T.R.* (raised by Guillot, 1895). Large, full, oval in shape, milk-white; vigorous and free-flowering.

Cheshunt Hybrid, *Hyb. T.R.* (raised from "Mdme. de Tartas" and "Prince Camille de Rohan" by Paul & Son, 1873). Large, full, cupped, deep carmine-red, paler behind, becoming violet with age. Almost hardy (in Germany).

Christine de Noué, *T.R.* (raised by J. B. Guillot, 1891). Very large, well-filled, purple chestnut-red, centre shining pink with silky silvery reverse; free-flowering.

Clio, *H.P.* (raised by W. Paul & Son, 1894). Very large, cupped, flesh-colour, carnation-pink within; free-flowering.

Clothilde Soupert, *Poly. R.* (raised from "Mignonette" and "Mdme. Damaizin" by Soupert & Notting, 1890). Medium size, well-filled, white, with a bright pink centre; flowers in rich clusters; fairly good in autumn.

Comte Henri Rignon, *Hyb. T.R.* (raised from "Baroness Rothschild" and "Ma Capucine" by J. Pernet fils., 1889). Large, to very large, full, cupped, but flattish afterwards, delicate creamy-yellow, with a salmon-coloured rose-red centre, unique. A magnificent rose, but owing to its short-jointed growth and very prickly stems, is not very suitable for cutting.

***Comte de Raimbaud**, *H.P.* (raised by Roland, 1867). A fine variety, with large, full, clear crimson flowers, fragrant; a free-flowering reliable variety.

Comtesse de Camondo, *H.P.* (raised from "Général Jacqueminot" by Lévêque, 1880). Very large, full, cupped, bright red shaded with orange-red and velvety brown.

Comtesse de Caserta, *T.R.* (raised by Nabonnand, 1877). Medium size, cupped, fairly full, coppery-pink; vigorous growth, somewhat climbing. Flowers till autumn. Very beautiful.

Comtesse Cécile de Chabillant, *H.P.* (raised by Marest,

1858). Medium size, very good habit and very full, silky flesh-coloured. Vigorous growth, erect. Very fragrant.

Comtesse de Frigneuse, *T.R.* (raised from "Mdme. Damaizin" by Guillot, 1886). Large, loosely filled, shining canary-yellow. Buds long. Very free.

***Comtesse de Ludre**, *H.P.* (raised by E. Verdier, 1880). Flowers fairly large and full, cupped, light crimson.

***Comtesse de Nadaillac**, *T.R.* (raised by Guillot, 1871). Flowers large and very full, globular, peach colour shaded with apricot, and suffused with coppery yellow at the base; moderate in growth; requires sheltered spots.

Comtesse d'Oxford, *H.P.* (sport from "Victor Verdier," Guillot, 1869). Very large, full, cupped, bright carmine-red. Erect growth, very free-flowering.

Comtesse de Paris, *H.P.* (raised from "Victor Verdier," by E. Verdier, 1864). Large, full, bright pink, tinted white outside; vigorous growth, free-flowering.

Comtesse Riza du Parc, *T.R.* (raised from "Comtesse de Labarthe," by Schwartz, 1877). Medium size, cupped, fairly full, solitary. Flowers chinese-pink with coppery ground; very fragrant.

Coquette des Blanches, *N.R.* (raised from "Blanche Lafitte" and "Sappho" by Lacharme, 1871). Medium size, full, white tinted with green; flowers freely in trusses.

Countess of Pembroke, *Hyb. T.R.* (raised from "President" and "Charles Lefèvre" by Bennett, 1882). Large, full, cupped, lilac-pink; vigorous, free.

Cramoisi superieur, *Monthly R.* (raised by Coquereau, 1832). Medium size, large, cupped, bright carmine-red; free-flowering.

Crimson Rambler, *Cl. R.* (introduced by Turner from Japan). Flowers small in abundant pyramidal trusses, bright cherry-red, growth particularly vigorous. Leaves soft green. Almost hardy, especially in Southern Germany. One of the most favoured climbing roses. See coloured plate, 12.

Cristata, *Moss R.* (raised by Vibert, 1827). Flowers large, very full, beautiful pink with centifolia fragrance. Sepals fringed like a cock's comb; very mossy.

***Crown Prince**, *H.P.* (raised by W. Paul & Son, 1880).

Flowers large, full, globular in form, deep crimson; early and free.

Danmark, *Hyb. T. R.* (raised by Zeiner-Lassen & Dithner, 1890). Large, cupped, silvery rose-red, like La France, but darker outside. Flowers erect, and not so drooping as in La France. Free, vigorous, bushy.

***Dawson Rose**, *Cl. R.* (raised from "Polyantha" and "Général Jacqueminot"). A vigorous climbing or trailing rose, with semi-double pale rosy flowers in clusters.

***Dean Hole**, *H.T.* (raised by A. Dickson & Sons, 1904). Flowers of great substance, fine form, silvery carmine shaded with salmon. Awarded the Gold Medal of the N.R.S.

***Debutante**, *Cl. R.* A beautiful Wichuraiana Rose, with clusters of beautiful soft pink flowers.

Devoniensis, *T.R.* (raised by Forestier, 1838). Large, well-filled, white, becoming yellow in the middle, with a rose-red centre; fragrant; vigorous in growth.

***Dorothy Perkins**, *Cl. R.* (raised from "Rosa Wichuraiana" and "Mme. Gabriel Luizet" by Jackson & Perkins, 1902). A charming American rose, with large trusses of clear rosy pink flowers, each about the size of a florin.

Dr. Andry, *H.P.* (raised from "Victor Verdier" by Eug. Verdier, 1864). Large, well-filled, cupped, bright red, smooth wood; free-flowering.

Dr. Grill, *T.R.* (raised by Bonnaire, 1887). Large, full, regular form, erect, coppery-yellow, with bright pink lustre.

Duc de Rohan, *H.P.* (raised from "Alfred Colomb" by Lévêque, 1862). Large to very large, well-filled, cupped, scarlet, with dark velvet shading. Flowers freely in trusses. A proved old kind.

Ducher, *Monthly R.* (raised by Ducher, 1870). Medium size, pure-white, free-flowering. A proved old rose.

Duchess of Bedford, *H.P.* (raised by Paul & Son, 1879). Large, full, cupped, pale scarlet-carmine.

Duchess of Connaught, *Hyb. T.R.* (raised from "President" and "Duchesse de Vallombrosa" by Bennett, 1880). Large, cupped, silvery-pink; free-flowering; fragrant, similar to La France. A velvety deep red H.P. Rose also bears this name.

Duchess of Edinburgh, *H.P.* (raised from "Jules Margottin" by H. Bennett, 1875). Very large, well-filled, delicate pink shaded with silver, darker centre.

Duchesse de Vallombrosa, *H.P.* (raised from "Jules Margottin," by Schwartz, 1875). Large, full, cupped, delicate pink, darker in centre; vigorous, free.

Duchesse Marie Salviati, *T.R.* (raised from "Mdme. Lambard" and "Mdme. Maurice Kuppenheim" by Soupert & Notting, 1890). Medium to large, chrome-yellow, shaded with flesh-colour, centre peach-red. Growth regular.

Duke of Connaught, *H.P.* (raised from "Maurice Bernardin" by Paul & Son, 1877). Large, full, beautiful habit, velvety carmine-red, flowers till autumn; vigorous, hardy.

Duke of Edinburgh, *H.P.* (raised from "Général Jacqueminot" by G. Paul, 1868). Large, full, bright shining orange-scarlet, shaded with carmine; free, vigorous.

Duke of Teck, *H.P.* (raised from "Duke of Edinburgh" by W. Paul & Son, 1880). Large, full, cupped, with a high centre, bright scarlet; flowers solitary on strong slightly-prickled stems.

Duke of Wellington, *H.P. (raised by Granger, 1864). Flowers medium size, full, fine form, brilliant velvety, crimson; good in autumn; also known as "Rosériste Jacobs."

Dupuy Jamain, *H.P. (raised by Jamain, 1868). Flowers large, full, globular, bright cerise; free-flowering and hardy; good in autumn, especially in cool seasons.

Earl of Dufferin, *H.P.* (raised by Dickson & Sons, 1888). Very large, erect, fine form, bright velvety carmine-red, shaded with deep chestnut-brown. Flowers a long time.

Earl of Pembroke, *H.P.* (raised from "Marquise de Castellane" and "Ferd. de Lesseps" by Bennet, 1883). Large, full, velvety carmine-red, darker at the edges.

Eclair, *H.P.* (raised from "Général Jacqueminot" by Lacharme, 1883). Large, very full, fine habit, velvety fiery red. Stems slender with many prickles; vigorous, free-flowering.

Edith D'ombrain, *H.T. (raised by A. Dickson & Sons, 1902). Flowers large and full, fine imbricated form, white tinged with pink. Awarded the Gold Medal of the N.R.S.

Edmée Metz, *Hyb. T.R.* (raised from "Caroline Testout")

and "Ferd. Jamain" by Soupert & Notting, 1901). Large, full, fragrant, carmine-pink, shaded with salmon-colour. Vigorous and very free-flowering.

Edouard Lefort, *H.P.* (raised by E. Verdier, 1887). Large, good habit, velvety deep fiery red, tinted and flecked with purple.

Elisabeth Vigneron, *H.P.* (raised from "La Reine" and "Duchess of Sutherland" by Vigneron, 1864). Very large, full, beautiful fresh pink; free-flowering, fragrant.

Elisa Boëlle, *H.P.* (raised from "Mdme. Récamier" by Guillot père, 1869). Medium size, full, light rose-red, becoming pure white; free.

Empéreur du Maroc, *H.P.* (raised from "Géant des Batailles" by Guinoisseau, 1858). Large, very full, flattish, deep blackish carmine-red, splendid. Rather subject to mildew, and a poor autumnal.

Emperor, *H.P.* (raised by Paul & Sons, 1885). Medium size, full, cupped, very dark red, almost black; free-flowering.

Enfant de Lyon, *T.R.* (raised by Avoux & Crozy, 1859). Medium size, full, pale yellow with canary-yellow centre. Very beautiful when half-open, becoming flattish with age. Fairly vigorous in growth; flowers in loose clusters.

Erinnerung an Brod, *Cl. R.* (raised from "rubiginosa" and "Génie de Chateaubriand" by Geschwind, 1886). Large, full, flat. Flowers almost purple-blue; vigorous growth, long shoots.

Ernest Metz, *T.R.* (raised by Guillot, 1889). Very large and well-filled, beautiful form; delicate pink, shaded with salmon and gold, darker behind.

Etandard de Jeanne d'Arc, *T.R.* (raised from "Gloire de Dijon" by J. Margottin, 1884). Very large and full, pure or creamy white; opens quickly, free, fragrant.

Ethel Brownlow, *T.R.* (raised by A. Dickson & Sons, 1887). Flowers large and full, imbricated with pointed centre, rosy flesh in colour, shaded bronzy yellow at the base; growth moderate; a fair weather rose.

Etienne Levet, *H.P.* (raised from "Victor Verdier" by Levet, 1872). Large, full, fine form, at first cupped, flattish later on, beautiful carmine-red.

***Etoile de France, H.T.** (raised by Pernet-Ducher, 1904). A fine free-growing rose; flowers large, full, fine shape, bright red, shaded with deep crimson.

Etoile de Lyon, T.R. (raised by Guillot, 1882). Very large, well-filled, fine habit, sulphur-yellow with a brighter centre; free-flowering, vigorous growth. Highly esteemed for forcing; often opens with difficulty in the open air.

Eugène Appert, H.P. (raised from "Géant des Batailles" by Trouillard, 1861). Large, full, bright, velvety carmine-red. Growths sturdy, very prickly. Leaves very green.

Eugène Fürst, H.P. (raised from "Baron de Bonstetten" by Soupert & Notting, 1875). Large, full, velvety carmine-red, shaded with deep purple. Vigorous growth, moderately free.

Eugène Verdier, Moss R. (raised by E. Verdier, 1872). Large, full, deep violet-purple.

Eugénie Lamesch, Poly. R. (raised from "Aglais" and "W. A. Richardson" by P. Lambert, 1899). Medium size, flowering in abundant trusses. Flowers deep coppery-yellow, deep yellow to white in all gradations.

Eugénie Verdier, H.P. (raised from "Victor Verdier" by Guillot, 1869). Large, full, cupped, bright whitish flesh-colour with deeper centre. (Not to be distinguished from "Mme. Marie Finger.")

Euphrosyne, Cl. R. (raised from "Polyantha sarmentosa" and "Mignonette" by P. Lambert, 1896). Small, clear pink with numerous yellow stamens.

***E. Y. Teas, H.P.** (raised by E. Verdier, 1874). Flowers medium size, full, globular, bright red, deliciously perfumed; free.

Farbenkönigin, Hyb. T.R. (raised from "La France" by Hinner, 1902). Medium size, very fragrant, light red with silvery-yellow sheen; very vigorous and erect; free-flowering.

Fellemborg, Monthly R. (raised by Fellemborg, 1857). Medium size, carmine-pink, well-filled, vigorous growth; flowers free till late autumn.

Ferdin-Chaffolte, H.P. (raised by Permet, 1879). Very large, full, cupped, bright red, the outer petals shaded with beautiful violet; free-flowering.

Fisher Holmes, H.P. (raised from "M. Bernardin" by E. Verdier, 1866). Large, full, camellia-like form, brilliant

scarlet with deeper shades. A good autumnal. A splendid rose.

***Florence Pemberton**, *Hyb. T.R.* (raised by A. Dickson & Sons, 1902). Flowers very large, full, fine form, creamy white flushed with pink, shading to peach at the edges. Awarded the Gold Medal of the N.R.S. Resembles "Alice Lindsell."

Francisca Kruger, *T.R.* (raised by Nabonnand, 1880). Medium to large, full pale flesh-colour, shaded with yellow and coppery-pink. Very fine, flowering until late in autumn; fragrant. See coloured plate, 15.

***François Michelon**, *H.P.* (raised by Levet, 1871). Flowers very large, full, fine globular form, deep rose, with silvery reverse to the petals.

Franz Deegen, *Hyb. T.R.* (raised from "Kaiserin Augusta Victoria" by W. Hinner, 1901). Large, full, very fragrant. Yellow, deeper within, delicate pink outside, long-stalked.

***Frau Lilla Rautenstrauch**, *H.T.* (raised by P. Lambert, 1903). Flowers very large and full, with high-pointed centre, apricot orange suffused with yellow and tinted with rose.

Fräulein Halske, *T.R.* (perhaps identical with "Marie Sisley," Guillot fils, 1868). Medium to large, bell-shaped, very fine habit. Light rose-red with coppery tinge, centre bright rose-red. This charming rose appears to be more grown than any other in Southern Germany; it is somewhat sensitive to severe winter frosts.

Frau Karl Druschki, *H.P.* (raised from "Merveille de Lyon" and "Caroline Testout" by P. Lambert, 1901). Large, full, cupped, pure white. Vigorous growth. Similar to "M^{me}. Joseph Combat." See coloured plate, 20.

Frau Peter Lambert, *Hyb. T.R.* (raised from "Kaiserin Augusta Victoria" by V. Welter, 1903). Large, full, very fragrant, deep pink shaded with salmon; highly recommended. Known as "Rosa - Kaiserin." Certificate of merit from the German Rose Society.

Gardeniæflora, *Cl. R.* (raised by E. Benary, 1900). Small loosely filled, white, with flowers in numerous trusses. (A white counterpart to "Crimson Rambler.")

General Appert, *H.P.* (raised from "Souv. de William

Wood" by Schwartz, 1885). Large, full, cupped, velvety blackish purple-red. Vigorous growth, free-flowering, good autumnal. One of the numerous deep-red kinds worthy of recommendation.

Général Baron Berge, *H.P.* (raised by Pernet père, 1892). Large, almost double, pomegranate-red, the outer petals with a violet sheen; fragrant, vigorous growth and good habit.

Général Jacqueminot, *H.P.* (raised probably from "Gloire des Rosomanes" by Rousselet, 1853). Large, fairly well-filled, cupped, fiery carmine-red. A good autumnal. An old, unsurpassed rose of the first rank. The parent stock of numerous similar hybrids.

***George Laing Paul**, *H.T.* or *H.P.* (raised by Soupert and Notting, 1904). Flowers very large and full, deep bright crimson; buds elongated, fine form.

Georges Farber, *T.R.* (raised by Bernaix, 1890). Medium size, moderately full, with close, but not very regularly arranged petals of a peculiar fiery salmon-red colour. Very vigorous and free-flowering, but rather tender, and therefore protection in winter is advisable.

Georges Vibert, *Striped R.* (raised by Robert, 1853). Large, full, cupped, purple-red, shaded with violet and striped with white. A strong-growing cluster rose.

***Gladys Harkness**, *H.T.* (raised by A. Dickson & Sons, 1900). Flowers large, fine form, deep salmon pink, with a silvery reflex to the petals.

Gloire de Bourg-la-Reine, *H.P.* (raised by Margottin, 1879). Large, full, bright scarlet. Vigorous and free-flowering. One of the brightest and most beautiful of red roses.

Gloire de Dijon, *T.R.* (raised by Jacotot, 1859). Large, very full, the cupped buds becoming flatter with age. Salmon-yellow with fiery copper-red towards centre. Growth very vigorous; should not be pruned severely. The flowering period is extended by bending down the shoots. An old and highly esteemed rose from which numerous hybrids have been raised. Flowers from June till November. Very fragrant. See coloured plate 5.

Gloire de Margottin, *H.P.* or *Hyb. T.* (raised by Margottin, 1888). Large, full, fiery cherry-red, fine form; buds long.

Gloire des Mousseuses, *Moss R.* (raised by Robert, 1852). Large, full, pinky flesh-colour with darker centre; well mossed.

Gloire Lyonnaise, *H.P.* (raised from "Baroness Rothschild" and "Mdme. Falcot" by Guillot, 1885). Very large, full, fine form, delicate chrome-yellow, often nearly white. Growth strong and sturdy; tea-rose fragrance.

Gloire des Polyanthas, *Poly. R.* (raised from "Mignonette" by Guillot, 1888). Small, full, bright pink on a white ground.

Golden Gate, *T.R.* (raised from "Safrano" and "Cornelia Kook" by Dingee & Conrad, 1892). Very large, beautiful, double, white tinted with pink, and having a delicate yellow centre; free-flowering.

Grace Darling, *T.R.* (raised by Bennett, 1885). Very large, well filled, cupped. Petals charming pink on a creamy white ground; vigorous growth. See coloured plate, 16.

Grossherzogin Mathilde, *T.R.* (sport from "Bougère," Vogler, 1861). Large, well-filled, erect, pure white, fragrant; growth regular.

Gruss an Teplitz, *Monthly R.* (raised by Geschwind, 1897). Flowers fairly large, some solitary, some in small clusters, bright orange-scarlet cherry-red. Usually grown as a bush rose, but does well also as a standard; often flowers well in autumn. See coloured plate, 19.

***Gustave Grünerwald**, *H.T.* (raised by P. Lambert, 1903). Flowers large and full, cupped, with a high centre, bright carmine pink with a yellow centre; buds yellowish red, long and pointed.

Gustave Piganeau, *H.P.* (raised from "Charlotte Corday" and "Baroness Rothschild" by J. Pernet-fils-Ducher, 1890). Very large, full, beautifully cupped; glossy carmine salmon-red; vigorous growth.

Gustave Regis, *Hyb. T.R.* (raised by J. Pernet-fils-Ducher, 1890). Large, semi-double, canary-yellow with saffron-yellow centre; erect growing, free-flowering.

Heinrich Schultheis, *H.P.* (raised from "Jules Margottin" by Bennett, 1883). Very large and full, shining delicate pink, free-flowering; vigorous growth.

***Helen Keller**, *H.P.* (raised by A. Dickson & Sons, 1895).

Flowers large and full, fine form, rosy cerise. Awarded the Gold Medal of the N.R.S.

Her Majesty, *H.P.* (raised from "Mabel Morrison" and "Canary" by Bennet, 1887). Exceedingly large (the largest rose next to Paul Neyron), full, glossy pink, scentless.

Hermosa, *Monthly R.* (raised by Machesnau, 1840). Medium size, full, delicate pink, fragrant, free-flowering. An old and tried rose.

Himmelsauge, *Cl. R.* (raised by J. C. Schmidt). Large, deep velvety purple-red, very free-flowering.

Hippolyte Barreau, *Hyb. T.R.* (raised from "Comtesse de Labarthe" and "Louis van Houtte" by Pernet). Large, fairly well-filled, carmine-red shaded with velvety crimson; erect, very free-flowering, and strong growing.

Hippolyte Jamain, *H.P.* (raised by Faudon, 1870). Very large, full, cupped, bright carmine-pink, free-flowering; few prickles.

Homère, *T.R.* (raised by Robert & Moreau, 1859). Medium size, fairly well-filled, cupped, bright pink with salmon centre, variable, sometimes flecked with purple.

Hon. Edith Gifford, *T.R.* (raised from "Mdme. Falcot" and "Perle des Jardins" by Guillot fils, 1882). Large, full, flesh-coloured, white on a yellowish ground, centre salmon-pink; growth moderate.

Horace Vernet, *H.P.* (raised from "Général Jacqueminot" by Guillot fils, 1867). Large, fairly well-filled, half cup-shaped, velvety carmine; strong-growing, free-flowering, fragrant.

***Innocente Pirola**, *T.R.* (raised by Ducher, 1878). Flowers large, full, with pointed centre, creamy white.

Isabella Sprunt, *T.R.* (sport from "Safrano," Verschaffelt, 1867). Large, semi-double, sulphur-yellow. Very strong-growing, and free-flowering until the autumn. Flowers in clusters, soon over; exquisite when half-open.

James Veitch, *Moss R.* (raised by E. Verdier, 1865). Medium size, full, deep slaty violet with fiery red; well mossed.

Janice Meredith, *Bengal R.* (raised from "Hermosa" and "La France" by E. G. Hill, 1903). Large, double, often opening quickly, pinky-carmine; a cluster rose not affected by heat.

Jaune bicolore, *Austrian Briar*. Single; petals brilliant orange-scarlet, pale yellow outside; free-flowering, magnificent, but quickly fading. Highly recommended as an "own-root" bush rose.

***Jean Ducher**, *T.R.* (raised by Ducher, 1874). Flowers large, very full, fine form, salmon yellow, shaded with peach.

Jean Liabaud, *H.P.* (raised from "Baron de Bonstetten" by Liabaud, 1875). Large, full, deep carmine, strong-growing, fragrant, but poor in autumn.

Jean Soupert, *H.P.* (raised from "Charles Lefèvre" and "Baron de Sémur" by Lacharme, 1875). Large, full, blackish velvety purple-red.

***Jeannie Dickson**, *H.P.* (raised by A. Dickson & Sons, 1890). Flowers large, with high pointed centre, rosy pink, the petals being distinctly margined with silvery pink.

***Jersey Beauty**, *Cl. R.* A "Wichuraiana" rose with long trailing or climbing shoots of vigorous growth. Flowers large, single, pale yellow, with bright yellow stamens.

John Hopper, *H.P.* (raised from "Jules Margottin" and "Mdme. Vidot" by Ward, 1863). Large, full, half-cupped, glossy carmine-pink; fine form; an old-established kind.

Johannes Wesselhöft, *Hyb. T.R.* (raised from "Kaiserin Augusta Victoria" by Walter & Hinner, 1900). Large, full, very fragrant, sulphur-yellow, passing into lighter yellow; strong-growing, long-stalked.

Jules Finger, *T.R.* (raised from "Catherine Mermet" and "Mdme. de Tartas" by Ducher, 1879). Very large, full, fine form, splendid bright salmon-pink to red.

Jules Margottin, *H.P.* (raised by Margottin père, 1853). Large, full, of beautiful centifolia form, deep pink; free-flowering, strong-growing, and good in autumn.

Kaiser Wilhelm, *T.R.* (raised from "Mdme. Bérard" and "Perle des Jardins" by Drögemüller, 1889). Large, full, very similar in form and growth to "Gloire de Dijon"; remarkable for its vivid carmine-pink shading, the half-open flowers being especially often exquisite.

Kaiserin Augusta Victoria, *Hyb. T.R.* (raised from "Coquette de Lyon" and "Lady Mary Fitzwilliam" by Lambert

and Reiter, 1891). Large, well-filled, fine form. Creamy white, shaded with yellow in the centre. More highly esteemed as a cut rose. See coloured plate, 17.

Kaiserin Friedrich, T.R. (raised from "Gloire de Dijon" and "Perle des Jardins" by Drögemüller, 1889). Very large, full, with the form of "Gloire de Dijon," salmon-yellow edged with carmine-red; long, vigorous growth.

***Killarney, H.T.** (raised by A. Dickson & Sons, 1898). Flowers large, long and pointed in bud, flesh colour shading to white, and suffused with pale pink; a beautiful rose.

Kronprinzessin Victoria, Bourbon R. (sport from "Souv. de la Malmaison," Vollert, 1888). Medium to large, well-filled, light sulphur-yellow, almost white; good for cutting in autumn.

***Lady Gay, Cl. R.** A beautiful Wichuraiana Rose, very much like "Dorothy Perkins," but with deeper-coloured rosy flowers borne in clusters on the long trailing stems.

Lady Mary Fitzwilliam, Hyb. T.R. (raised from "Devoniensis" and "Victor Verdier" by Bennett, 1882). Very large, cupped, fairly full, pale delicate flesh-colour; sturdy growth.

***Lady Moyra Beauclerc, H.T.** (raised by A. Dickson & Sons, 1901). Flowers very large; bright madder Rose with silvery reflex.

***Lady Roberts, T.R.** (raised by F. Cant & Co., 1902). Flowers large and perfect in shape, with long, pointed buds; colour variable, usually rich reddish apricot with a coppery red base, the margins of the petals being sometimes shaded with pale orange. A good rose for market work. Awarded two gold medals.

La France, Hyb. T.R. (raised by Guillot, 1868). Very large, exquisite form, centifolia type, bright pink edged with silvery white. Free-flowering, fragrant, hardy. Universally known rose of the first rank. See coloured plate, 9.

Lamarque, T.R. (raised by Marechal, 1830). Medium to large, full, cupped, white with a pale yellow centre. Very free, but sensitive to cold. Requires severe pruning.

La Reine, H.P. (raised by Laffay, 1843). Very large, full, cupped, lilac-pink; fragrant, vigorous, erect growth. Suitable for dwarf groups.

Leuchtstern, *Cl. R.* (raised by J. C. Schmidt, 1889). Pale red, single, flowering in clusters in great abundance.

Liberty, *Hyb. T.R.* (raised by A. Dickson & Sons, 1900). Below medium size, with good camellia-like form, fiery-red. Highly recommended as a fine plant for groups, but may also be grown as a standard.

L'Idéal, *N.R.* (raised by Nabonnand, 1888). Medium size, fairly full, salmon-yellow mixed with fiery copper-orange. Loose form, often very irregular; splendid in bud; growth half-climbing. Sensitive to wet and cold.

Little Gem, *Moss R.* (raised by W. Paul & Son, 1880). Small, carmine-pink, loosely filled, moderately mossed, with flowers in clusters. A charming little rose.

***Longworth Rambler**, *Cl. H.T.* (raised by Liabaud, 1880). A quick-growing, free-flowering rose, with brilliant crimson flowers; excellent for pillars, arches, &c.

Louise Odier, *Bourbon R.* (raised by Margottin, 1851). Medium size, good centifolia form, bright pink. Strong-growing, old-established, beautiful rose.

Louis van Houtte, *H.P.* (raised by Lacharme, 1864). Large, full, cupped, fine form; bright carmine-red with darker shading. Old-established, fragrant, and splendid rose of the first rank. See coloured plate, 7.

Luciole, *T.R.* (raised from "Red Safrano" by Guillot fils, 1887). Large tulip-like form, moderately full; bright Chinese carmine-pink with coppery tint. Fragrant.

Lutea, *Austrian Briar*. Flowers single, bright citron-yellow. Effective as a bush on its own roots; free-flowering, but soon over.

Mabel Morrison, *H.P.* (sport from "Baroness Rothschild," Bennett, 1879). Large, loosely-filled, pure white to pale pink. Growths sturdy, very prickly, erect.

Madame Abel Chatenay, *Hyb. T.R.* (raised from "Dr. Grill" and "Victor Verdier" by Pernet-Ducher, 1898). Medium size, full, carmine-pink, shaded with salmon, and with a brighter colour in the centre. Growth strong. Shoots spreading.

Madame Bérard, *T.R.* (raised from "Gloire de Dijon" and "Mdme. Falcot" by Levet père, 1869). Large, well-filled,

cupped, salmon-yellow, the outer petals more pink. Growth very vigorous, like "Gloire de Dijon"—one of its parents.

Madame Bravy, *T.R.* (raised by Guillot, 1846). Medium size, well-filled, cupped, yellowish white with pale-pink centre; free-flowering. Growth moderate.

***Madame Chas. de Luze**, *H.T.* (raised probably from "Souv. de President Carnot" and "Mdme. Ravary," by Pernet Ducher, 1904). A fine large-petalled flower, white to flesh colour, with a buff or yellow centre.

Madame Caroline Testout, *Hyb. T.R.* (raised from "Mdme. de Tartas" and "Lady Mary Fitzwilliam" by J. Pernet-Ducher, 1891). Very large, well-filled, cupped, centifolia form, beautiful rosy-red like "La France," but the petals are stronger and less tinted with silvery white. A magnificent rose of recent years, with vigorous growth.

Madame Chédane Guinoisseau, *T.R.* (raised from "Safrano" by Ch. Guinoisseau, 1878). Large, moderately full, pale canary-yellow; very free; fragrant. One of the best pale yellow Tea Roses. See coloured plate 11.

Madame de Watteville, *T.R.* (Guillot, 1884). Large, full, good form, erect; white with light salmon colour, and edged with bright rose.

Madame Edouard Ory, *Moss R.* (raised by Moreau-Robert, 1854). Medium to large in size, full, cupped, fiery crimson-red, paler at the edges. Usually five flowers on the very prickly shoot.

Madame Eugène Verdier, *T.R.* (raised from "Mdme. Barth. Levet" by Levet, 1883). Medium size, well-filled, pure deep yellow. Growths strong and rather long. A splendid Rose, but sensitive to wet and cold, and therefore requires protection in winter; fragrant.

Madame Falcot, *T.R.* (raised by Guillot fils, 1858). Medium to large in size, nankeen-yellow, darker in the centre; beautiful tulip-like form. Free-flowering with moderate growth. The most perfect flowers appear in autumn. Requires protection in winter.

Madame Gabriel Luizet, *H.P.* (raised from "Jules Margottin" by Liabaud, 1878). Very large, full, half-cup shaped, satiny pink. Vigorous in growth, but poor in autumn.

Madame Georges Bruant, *Japanese R.* (raised from "Rugosa" and "Sombreuil" by Bruant, 1887). Large, nearly double, pure white, in clusters of six or more flowers; suitable for groups in bush form.

Madame Hardy, *Damask R.* (raised from "Clinophylla" by Hardy, 1832). Medium size, full, well-cupped form, pure white, very fragrant. Old, tried, hardy rose; good for groups, especially on its own roots, or alone as a pillar rose.

Madame Honoré Defrèsne, *T.R.* (raised from "Mdme. Falcot" by Levet, 1878). Moderate size, full, deep yellow, with a coppery centre. Somewhat irregular in form, often too much split. Strong, free-flowering, a little tender, like the similar "Mdme. Eugène Verdier." Well-developed blooms are charming.

Madame Hoste, *T.R.* (raised from "Victor Pulliat" by Guillot, 1888). Very large, well-filled, pale yellow, often tinted with pink at the edges, bright yellow in the centre. Strong-growing, erect.

Madame Isaac Pereire, *Bourbon Rose* (raised by Margottin, 1882). Flowers very large and full, brilliant carmine; useful as a bush, pillar, or standard rose.

Madame Jean Dupuy, *T.R.* (raised by P. Lambert, 1901). Large, good form, reddish golden yellow towards the middle, changing from yellowish pink to creamy yellow towards the outside; the outer petals heavily edged with pink. Free-flowering and lasting. Growth like that of "Francisca Kruger." Fragrant.

Madame Joseph Combet, *Hyb. T.R.* (raised by J. Bonnaire, 1893). Large to very large, well-filled and beautifully cup-shaped; creamy-white, tinted with delicate soft yellow within. Erect, almost without prickles, of vigorous growth.

Madame Jules Grolez, *Hyb. T.R.* (raised by Guillot, 1896). Medium to large in size, well-filled and beautiful form, bright Chinese pink, similar to "Belle Siebrecht." Growth strong, freely branched.

Madame J. P. Soupert, *Hyb. T.R.* (raised from "Caroline Testout" and "Alice Furon," by Soupert & Notting, 1901). Very large, full, fragrant, white with yellow sheen; free-flowering.

Madame Lambard, *T.R.* (raised from "Mdme. de Tartas")

by Lacharme, 1878). Large, full, cupped, bright pink with salmon pink. Vigorous, free-flowering, esteemed as a rose for groups, but also recommended as a standard.

Madame Margottin, *T.R.* (raised by Guillot, 1866). Large, well-filled, cupped, deep citron-yellow, with peach-coloured centre. Free-flowering, many flowers imperfect, some magnificent. Growth moderate.

Madame Marie Finger, *H.P.* (raised from "Victor Verdier" by Rambeaux, 1874). Large, full, cupped. Bright flesh-coloured pink, deeper in the centre. Reminds one of "La France."

***Madame N. Levavasseur**, *Poly. R.* (raised by Levavasseur, 1902). A dwarf-growing variety, with large, pyramidal trusses of bright crimson flowers in summer and autumn. An excellent variety for bedding out.

Madame Pernet-Ducher, *Hyb. T.R.* (raised by J. Pernet-Ducher, 1892). Medium size to large, almost full, canary-yellow, the outer petals tinged with carmine-red, becoming creamy white with age. Growth strong, erect.

Madame Pierre Cochet, *N.R.* (raised by Cochet, 1889). Medium size, moderately full, fiery orange-yellow passing into yellowish-white; soon over, like the related "W. A. Richardson." Charming in bud and half-expanded, and superior to "W. A. Richardson"; sensitive to frost.

Madame Pierre Oger, *Bourbon R.* (sport from "Reine Victoria," Oger, 1879). Medium size, cupped, beautiful loose form, pale pink, gradually becoming redder in colour; a particularly charming, delicately-scented rose. Vigorous growth, good in autumn. See coloured plate, 14.

Madame Ravary, *Hyb. T.R.* (raised by Pernet-Ducher, 1899). Medium size, fairly full, orange-yellow, similar to "Safrano." Very beautiful in the bud or half-opened state, becoming flatter with age. Growth strong, moderately upright; free-flowering.

Madame Sancy de Parabère, *Cl. R.* (raised by Bonnet, 1876). Medium size, full, bright pink, early and free-flowering. Vigorous growths, almost without prickles. Suitable for the making of weeping roses.

Madame Victor Verdier, *H.P.* (raised from "Seneur

Vaisse" by Eug. Verdier, 1863). Large, well-filled, bright carmine-red. Vigorous growth, slightly prickled, very free-flowering and a good autumnal rose. An old well-established beautiful rose. See coloured plate, 6.

Madame Viger, *Hyb. T.R.* (raised from "Heinrich Schultheis" and "G. Nabonnand" by Jupeau, 1901). Very large, full, delicate pink, almost white in autumn. Strong growth. Stems long and strong, almost standing alone.

Madame Welche, *T.R.* (raised from "Devoniensis" and "Souvenir d'un Ami," by Vve. Ducher, 1878). Large, full, good form, pale yellow, with coppery orange-yellow centre. Flowering and growth moderately free.

Mademoiselle Cécile Brunner, *Poly. R.* (raised by Vve. Ducher, 1880). Small, yellowish pink, full, in numerous clusters. Growth moderate.

Mademoiselle Eugénie Verdier, *H.P.* (raised by Guillot, 1870). Large, full, cupped, flesh-coloured pink with silvery reverse. Synonym—"Mdme. Marie Finger."

Mademoiselle Christine de Nouë, *T.R.* (raised by J. B. Guillot, 1891). Very large, full, chestnut purple-red, wallflowered in the middle; vigorous, free, and lasting in blossom.

Mademoiselle Laurette Messimy, *Monthly R.* (raised by Guillot fils, 1888). Medium size, not well filled, Chinese pink, ground colour bright saffron-yellow. Very free-flowering, soon over, but very effective; continues till autumn.

Magna Charta, *H.P.* (raised by W. Paul & Sons, 1876). Large, full, cupped, beautiful pink, shaded with carmine. Strong-growing, free-flowering. A good established sort, especially as a dwarf plant for beds.

***Maharajah**, *H.P.* (raised by B. R. Cant & Sons, 1904). A fine new variety in the way of "Carmine Pillar." Flowers large, single, velvety crimson, with rich golden stamens in the centre. A fine pillar rose.

Mai Röschen (*Rosa majalis*). *Centifolia Rose*. Small centifolia type, pale pink with a darker centre. Growth dwarf. A charming, early-flowering, hardy, miniature rose of delicious fragrance. Not an autumnal.

Maman Cochet, *T.R.* (raised by Cochet Scipion, 1892). Large, well-filled, tulip-like form, flesh-coloured pink, changing

to copper colour. Growth strong, flowers solitary, very fine. (See also "White Maman Cochet.")

Mamie, *H.T. (raised by A. Dickson & Sons, 1901). Flowers very large and full, with a high pointed centre, rosy carmine with a distinct yellow zone at the base of the fine petals.

Marchioness of Downshire, *H.P. (raised by A. Dickson & Sons, 1894). Flowers large, full, fine form, beautiful satin pink shaded with rose.

Marchioness of Londonderry, *H.P.* (raised by Dickson & Sons, 1894). Large, beautiful form, borne on erect stalks, ivory-white tinted with rose; strong, free, fragrant.

Maréchal Niel, *T.R.* (raised by Pradel, 1864). Large, very full, cupped, deep yellow, very fragrant. Growths very strong and long; must not be too severely pruned; the long shoots are best bent down, or pinched out beyond the 12 to 14 leaf, so as to cause the development of flower-buds. This, the finest of all Tea Roses, is sensitive to wet and cold; it usually flourishes in warm soils and develops the richest display of flowers in greenhouses, where as a cut rose with an inexhaustible mass of flowers, it rewards the gardener for his trouble. When budding it is advisable to use only buds from those shoots that are seen to produce flowers freely. The more recently raised variety—the "White Maréchal Niel," has met with but little recognition, as it shares the disadvantage of the parent variety, without possessing its perfect beauty. See coloured plate, 8.

Margaret Dickson, *H.P. (raised by A. Dickson & Sons, 1891). Flowers large, fairly full, fine form, ivory white with blush centres; free and vigorous but subject to mildew. Awarded the Gold Medal of the N.R.S.

Marie Rady, *H.P. (raised by Fontaine, 1865). Flowers very large and full, globular imbricated, brilliant red.

Marie Verdier, *H.P. (raised by E. Verdier, 1877). Flowers deeply cupped, pure silvery rose.

Marianne Pfitzer, *Hyb. T.R.* (raised from "Kaiserin Augusta Victoria," by O. Jakobs, 1902). Large, very full, flesh-coloured, with a deep pink and reddish sheen. Growth like that of "K. A. Victoria," its parent.

Marie Baumann, *H.P.* (raised from Alfred Colomb, by Baumann, 1863). Large, full, cupped, of exquisite form. Bright

and vivid red. Fairly hardy, free-flowering. An old and beautiful rose of tried merit; good in autumn, fragrant.

Marie Van Houtte, *T.R.* (raised from "Mdme. de Tartas," and "Mdme. Falcot" by Ducher, 1872). Large, full, cupped, yellowish white, edged with bright pink; suffused with carmine-pink on a golden yellow ground before fading. Growth moderately strong; rather sensitive to winter frost. A beautiful rose of the first order. See coloured plate, 10.

Marquise de Castellane, *H.P.* (raised from "Jules Margottin" by Pernet, 1870). Very large, full, globular, regular form, beautiful bright pink.

Marquise de Vivens, *T.R.* (raised by Dubreuil, 1886). Large, almost full. Petals edged with Chinese pink on a whitish ground, centre straw yellow. Growth moderate. A beautiful but rather tender variety.

Marquise Litta de Breteuil, *Hyb. T.R.* (raised by J. Pernet-Ducher, 1894). Very large, full, cupped, carmine-pink, centre orange-scarlet, becoming bluish with age, borne on strong long stems. Growth vigorous.

***Maurice Bernardin**, *H.P.* (raised by Granger, 1861). Flowers globular, with high centre, shaded crimson, sweetly fragrant. (Also known as "Exposition de Brie," "Ferdinand de Lesseps" and "Sir Garnet Wolseley.")

Merveille de Lyon, *H.P.* (raised from "Baroness Rothschild," by Pernet, 1882). Large, closely filled, cup-like form, white with a pink centre, becoming pink with age. Growth erect, sturdy.

Meteor, *Hyb. T.R.* (raised by H. Bennett, 1888). Medium size, full, cupped, deep velvety crimson-red, free-flowering till autumn. The flowers are inclined to become scorched too early in summer. Forced flowers retain their freshness of colour in winter for a week.

Mignonette, *Poly. R.* (raised by Guillot fils, 1881). Very small, fine form, flowers in clusters, white passing into pink. Weak in growth.

***Mildred Grant**, *H.T.* (raised by A. Dickson & Son, 1901). Flowers very large, of great substance, creamy white suffused with pale rose. A magnificent rose. Awarded the Gold Medal of the N.R.S.

Miniature, *Poly. R.* (raised by Alégatière, 1885). Very small, well-filled, pinkish-white. Dwarf, esteemed for borders.

Monsieur Boncenne, *H.P.* (raised by Liabaud, 1864). Large, full, fine form, velvety, deep dark carmine-red. Growth strong, erect. A beautiful rose of the first order, but only fairly good in autumn. "Baron de Bonstetten" is identical with this variety.

Moss Rose (*Rosa muscosa communis*). The common Moss-rose. Large, globular, bright pink with deeper-coloured centre. An old and tried beautifully mossed rose with a centifolia fragrance. See coloured plate, 2.

Mrs. Bosanquet, *Bourbon R.* (raised by Laffay, 1832). Medium size, full, cupped, white tinted with pink, fragrant, flowering till autumn. An old charming rose of moderate growth and established merit. See coloured plate, 3.

Mrs. B. R. Cant, *T.R. (raised by B. R. Cant & Sons, 1901). Flowers full and globular, the outer petals deep rose, the central ones silvery rose. Awarded the Gold Medal of the N.R.S.

Mrs. Caroline Swailes, *H.P.* (raised from "Eug. Verdier" by Swailes, 1885). Very large, well-filled, pure silvery-pink, erect.

Mrs. David McKee, *H.T. (raised by A. Dickson and Sons, 1904). Flowers very large and full, creamy yellow, free and continuous in bloom. Awarded the Gold Medal of the N.R.S.

Mrs. Edward Mawley, *T.R. (raised by A. Dickson & Sons, 1899). Flowers large, fine form, and great substance with high-pointed centre; colour bright carmine shaded salmon; very fragrant. Awarded the Gold Medal of the N.R.S.

Mrs. John Laing, *H.P.* (raised from "Fr. Michelon" by Bennett, 1888). Very large, well-filled, cupped, bright glossy pink colour. Free-flowering, good in autumn. Stems erect, slightly prickled.

Mrs. Paul, *Bourbon R.* (raised by Paul & Son, 1892). Medium size, camellia-like form. Petals thick, delicate white, shaded with peach-pink. Strong-growing, free-flowering, well into the autumn.

Mrs. R. G. Sharman Crawford, *H.P. (raised by A. Dickson & Sons, 1894). Flowers large, beautiful form, clear

rosy pink, the outer petals shaded with pale flesh colour, white at the base, very free. Awarded the N.R.S. Gold Medal.

Mrs. W. Flight, *Cl. R. (Flight, 1904). A beautiful Rambler Rose of vigorous growth; flowers semi-double, bright rosy pink, produced in large trusses on long shoots.

Muriel Grahame, *T.R. (a sport from "Catherine Mermet," A. Dickson & Sons, 1897). Flowers similar to its parent, but pale cream in colour, faintly flushed with rose. Awarded the Gold Medal of the N.R.S.

Nabonnand, *G., T.R.* (raised by Nabonnand, 1889). Large to very large, moderately full. Petals broad, oval, delicate pink, tinted with yellow. Strong-growing, and in flower till late autumn.

Niphetos, *T.R.* (raised by Bougère Breton, 1843). Large, full, tulip-like form, pure white; buds long, tapering, drooping. A delightful rose, but rather tender in the open air; requires good protection in winter. Highly esteemed on account of its freedom of flowering and beauty when forced in greenhouses.

Œillet flamand, *Striped R.* (raised by Vibert, 1845). Medium size, full, cupped, white striped with pink and lilac-pink. Growth strong, especially suitable for groups.

Ophirie, *N.R.* (raised by Guillot, 1841). Medium size, cupped, rather loosely filled, coppery apricot-yellow.

Oscar Cordel, *H.P.* (raised from "Merveille de Lyon" and "André Schwartz" by P. Lambert, 1898). Large, full, cup-like. Bright deep rosy-red. Flowers always solitary. Growth strong.

Panachée d'Orleans, *H.P.* (sport from "Baronne Prevost," Dauvesse, 1854). Medium size, almost full, light flesh-colour, striped with pink and purple-red. Strong-growing, flowers in clusters; bush rose.

Papa Gontier, *T.R.* (raised by Nabonnand, 1883). Large, loosely filled, bright pink buds, bright red. Moderate growth, free-flowering, especially on loamy soil.

Papa Lambert, *Hyb. T.R.* (raised from "White Lady" and "Marie Baumann" by P. Lambert, 1899). Large, very full, beautifully cupped form. Vivid pink, darker inside. Growth erect, straight, flowers solitary with a strong centifolia fragrance.

Parviflora, *Centifolia R.*, small Dijon Rose. Flowers very small, beautifully double and cupped, pink. Forms a bush of only 12 to 18 inches high.

Paul's Carmine Pillar, *H.P. (raised by Paul & Son, 1895). Flowers single, bright rosy carmine, freely produced. A good plant for pillars, arches, &c.

Paul Nabonnand, *T.R.* (raised by Nabonnand, 1878). Very large, well-filled, hydrangea-pink in colour. Growth strong, erect. One of the most highly esteemed roses for cutting; it is planted in the Riviera by the hundred thousand, and is exported in a cut state.

Paul Neyron, *H.P.* (raised from "Victor Verdier" and "Anna de Diesbach" by Levet, 1870). Exceedingly large, full, cupped, beautiful deep pink. Of robust growth. Flowers solitary on strong stems. The largest rose, somewhat coarse.

Paquerette, *Poly. R.* (raised by Guillot fils, 1875). Very small, full, fine form, especially free-flowering clusters, pure white. A dwarf bush rose.

***Penzance Briars.** Charming roses; raised from the Common Sweet Briar and the garden forms of *H.P.*'s, &c. They are vigorous in growth and free in blossom during the summer months. Flowers single or semi-double.

Perle des Jardins, *T.R.* (raised from "M^{me}. Falcot" by Levet, 1875). Large, globular, well-filled, bright straw-yellow to deep canary-yellow, with an orange centre. Growth moderate; very fragrant. Much esteemed for forcing, but also valuable in the open air.

Perle de Lyon, *T.R.* (raised by Ducher, 1873). Large, full, beautifully cupped, deep yellow, becoming apricot-yellow with age. Plants of strong sturdy growth.

Perle des Neiges, *Cl. R.* (raised by F. Dubreuil, 1903). White, semi-double, frequently in blossom; known as "White Crimson Rambler."

Perle d'Or, *Poly. R.* (raised from "Polyantha" and "M^{me}. Falcot" by Rambaux, 1883). Small, good form, nankeen-yellow, with orange-coloured centre. Growth dwarf.

Persian Yellow, *Austrian Briar* (raised by Willock, 1833). Medium size, globular, well-filled, golden yellow, very free, but only flowers once in the season. Best on its own roots as a tall bush rose. Should not be pruned much, as the numerous flowers are borne at the tips of the shoots.

Pharisæer, *Hyb. T.R.* (raised by W. Hinner, 1901). Large,

full, whitish-pink with salmon-pink; fairly long-stalked, free-flowering.

Pierre Notting, *H.P.* (raised from "Alfred Colomb" by Portemer fils, 1863). Very large, full, globular, blackish-red with deep violet. Strong-growing, flowers in clusters; good in autumn. Very fragrant.

***Philadelphia Rambler**, *Cl. R.* A charming American variety with clusters of deep crimson blossoms.

Polyantha. *Small-flowered R.* A distinct group of charming roses with small, light-coloured, double flowers. (See "Classification of Roses," p. 10, where more detailed descriptions of the group and enumeration of the choicest kinds will be found.)

Pride of Waltham, *H.P.* (sport from "Countess of Oxford," Paul & Son, 1882). Large, full, delicate flesh-colour, shaded with bright pink; vigorous growth, free-flowering.

***Prince Arthur**, *H.P.* (raised by B. R. Cant & Sons, 1875). Flowers large, full, globular, bright crimson, somewhat similar to "Général Jacqueminot."

Prince Camille de Rohan, *H.P.* (raised from "Maurice Bernardin" by Eug. Verdier, 1862). Large, well-filled, deep velvety chestnut brown with blood red; flowers freely in clusters. An old and proved rose—one of the best dark H.P.'s.

Princesse Alice de Monaco, *T.R.* (raised by A. Weber, 1894). Medium size, full, cup-shaped. Delicate greenish-yellow, tinted with pink, and edged with carmine-pink; free and lasting in bloom. Growth moderate.

Princesse de Béarn, *H.P.* (raised by Lèveque, 1885). Large, full, globular. Blackish deep red shaded with orange-scarlet. Very free-flowering. A fine rose of proved merit.

Princess Beatrix, *H.P.* (raised by Bennett, 1888). Large, very full, fine form, exquisite golden yellow, edged with bright pink, pale yellow reverse. Erect, free-flowering.

Princesse de Bessaraba, *T.R.* (raised by Bernaix, 1890). Medium size, moderately full, carmine-red, passing into canary yellow within.

Princesse de Sagan, *T.R.* (raised by Dubreuil, 1888). Medium size, semi-double, cupped, velvety crimson-red, shaded with blackish purple. Growth moderate.

Regierungsrat Stockert, *H.P.* (raised from "Dupuy-

Jamain" and "Mdme. de Seigné" by Soupert & Notting, 1888). Large, full, glossy pink; free-flowering.

Reine Blanche, *Moss R.* (raised by Moreau-Robert, 1857). Medium size, full, flattish. Pure white, with a greenish centre; very strong growth.

Reine des îles de Bourbon, *Bourbon R.* (raised by Mangar, 1834). Medium size, loosely filled, globular, delicate pinkish-red. Growth moderate. A charming hardy rose of proved merit. Free and lasting in bloom.

Reine Emma des Pays-Bas, *T.R.* (raised by Nabonnand, 1879). Medium size, loosely filled, flattish, golden yellow suffused with salmon and pink. Growth moderate.

Reine Marie Henriette, *Hyb. T.R.* (raised from "Gloire de Dijon" and "Général Jacqueminot" by Levet, 1879). Large, three-parts full, globular to cup-shaped, of a distinct fiery cherry-red. Growths very strong and long; should not be severely pruned; on the other hand, the flowering period may be extended by bending down the long shoots. Highly recommended as a climbing rose on sheltered walls. Very fragrant.

Reine Natalie de Serbie, *T.R.* (raised from "Mdme. Lambard" and "Sulfureux" by Soupert & Notting, 1886). Large, well-filled, beautiful form, bright rose-pink, lightly shaded with yellow. Strong-growing; free-flowering.

Reine Victoria, *Bourbon R.* (raised by J. Schwartz, 1872). Medium size, full, bright pink. Strong-growing. Much favoured as a bedding rose.

***Rev. Alan Cheales**, *H.P.* (raised by Paul & Son, 1897). A fine rose, with large, full, finely formed flowers of pure lake, with a silvery reverse to the petals.

Rêve d'Or, *N.R.* (raised from "Mdme. Schultz" by Duchesse, 1870). Medium size, fairly full, deep yellow. Strong-growing.

***Robert Scott**, *H.T.* (raised from "Merveille de Lyon" and "Mrs. W. J. Grant" by Scott & Son, 1901). Flowers large and full, rather globular in form, clear rosy pink shading to flesh colour on the outer petals; very vigorous.

Rubin, *Cl. R.* (raised from "Crimson Rambler" by J. C. Schmidt, 1899). Flowers bright ruby colour. Not susceptible to mildew, &c., and is perfectly hardy.

Ruga, Cl. R. Large, full, cupped, pale flesh-colour passing into yellowish-white. Suitable for covering walls, and as a weeping rose in shaded places.

Rugosa, Japanese R. Represents a group of very hardy roses, with single or semi-double, mostly with white flowers, and with beautiful deep-green foliage. "Mdme. Georges Bruant" (which see) is one of the most beautiful in the section. Fruits large, coral-red; esteemed as a preserve.

Safrano, T.R. (raised by Beaugard, 1839). Medium to large in size, loosely filled, coppery-yellow, apricot-coloured in the centre; exquisite in bud. Strong-growing and free-flowering.

Salet, Moss R. (raised by Lacharme, 1854). Medium size, beautiful form, bright pink, paler outside; of very strong growth, and free-flowering, especially towards autumn.

Scipion Cochet, H.P. (raised by Eug. Verdier, 1888). Large, full, fine form, glossy red and velvety purple, with amaranth-red reverse. Growth erect.

Senateur Vaisse, H.P. (raised from "Général Jacqueminot" by Guillot père, 1860). Very large, well-filled, globular, bright-red. Plants moderately vigorous, smooth-wooded, good in autumn; fragrant.

Setina, Monthly R. (sport from "Hermosa," Henderson, 1879). Medium size, full, pink, strong-growing, long shoots, free-flowering; stands very close to Hermosa.

***Sir Rowland Hill, H.P.** (a sport from "Chas. Lefebvre," Mack, 1888). Flowers medium size, fairly full, good shape, deep velvety plum colour; fairly vigorous growth. Awarded N.R.S. Gold Medal.

Socrates, T.R. (raised by Moreau-Robert, 1859). Medium size, fairly full, cupped, becoming flattish and irregular with age. Pinky flesh-colour, with bright apricot-yellow towards the centre. Particularly charming in the half-opened bud-state. Sensitive to frost in winter.

Soleil d'Or, H.P. (raised from "Persian Yellow" and "Antoine Ducher" by J. Pernet-Ducher, 1900). Large, full, rather irregular in form. Golden yellow shaded with orange-red. Growth strong, free-flowering, and good in autumn. One of the most charming of the new roses.

Solfaterre, N.R. (raised from "Lamarque" by Lamarque,

1842). Large, full, sulphur-yellow; strong-growing; requires good protection in winter, like "Lamarque."

Sombreuil, T.R. (raised from "Gigantesque" by Robert and Moreau, 1850). Large, full, erect, white, shaded with delicate pink; plants strong-growing. A good, proved variety.

Soupert et Notting, Moss R. (raised by Pernet, 1875). Very large and full, beautiful centifolia form. Exquisite pink with carmine-red centre. Growth weak. Flowering continues into the autumn.

Souvenir de Catherine Guillot, T.R. (raised by P. Guillot, 1896). Large, full, fine form, colour between carmine and copper-red on an orange-yellow ground. Growth moderate.

Souvenir de la Malmaison, Bourbon R. (raised probably from "M^{de}. Desprez" by Boluze, 1843). Very large, well filled, cup-shaped at first, becoming flattish with age. Satiny white with chamois flesh-coloured centre. Growth strong, erect, continually in flower. An old proved rose of the first order. See coloured plate, 4.

Souvenir de Madame Eugène Verdier, H.P. (raised from "Baroness Rothschild" by Jobert). Brilliant pink with a silvery reverse.

Souvenir de Paul Neyron, T.R. (raised from "Devoniensis" and "Souv. de la Malmaison" by Levet, 1872). Medium size, full, semi-globular, creamy white in colour, with a bright pink centre. A moderately free-growing, free-flowering, beautiful variety that requires favourable weather to expand well. The June flowering is often a failure; the most perfect blooms appear in September and October.

Souvenir de Pierre Notting, T.R. (raised from "Maréchal Niel" and "Maman Cochet" by Soupert, 1902). Very large, well-filled, apricot-yellow washed with golden-yellow, the petals edged with carmine-pink. Similar in form and beauty to "Maman Cochet."

Souvenir de President Carnot, Hyb. T.R. (raised from "Lady Mary Fitzwilliam" by J. Pernet-Ducher, 1893). Large, well-filled, white, with a delicate fleshy-pink centre. Free-flowering, strong-growing, erect, with sturdy stems. Beautiful tulip-like form when expanding, becoming flatter with age.

Souvenir de Spa, H.P. (raised from "Victor Verdier" by

Gautreau, 1874). Large, full, globular, charming. Strong-growing, free-flowering; one of the best H.P. Roses.

***Souvenir de S. A. Prince, T.R.** (a white sport from "Souvenir d'un Ami," Prince, 1889). Flowers large, full, perfectly globular, pure white; free-flowering, vigorous. N.R.S. gold medal.

Souvenir de Thérèse Levet, T.R. (raised from "Adam" by Levet, 1882). Very large, well-filled, deep red shading on a yellow ground.

Souvenir de Victor Hugo, T.R. (raised from "Comtesse de Labarthe" and "Regulus" by Bonnaire, 1886). Large, full, bright Chinese-pink, with a coppery orange-yellow centre, the petals edged with silver. Growth moderate.

Souvenir de William Wood, H.P. (raised by E. Verdier, 1864). Large, full, very deep blackish purple, shaded with fiery-red; free-flowering.

Souvenir d'un Ami, T.R. (raised by Desfugères, 1846). Large, moderately full, globular, delicate pink, flowers drooping on long stalks. Growth regular; fragrant.

Souvenir de Rosiériste Rambeaux, T.R. (raised from "Goubault" by Dubreuil, 1884). Medium size, almost full, pale canary-yellow, gradually passing into pink, and edged with bright pink. A beautiful, somewhat tender rose of moderate growth, which is surpassed by the similar but much more vigorous "Grace Darling."

Stéphanie et Rudolphe, T.R. (raised from "M^{me}. Barthélemy Levet" by Levet, 1881). Large, globular, delicate salmon-yellow with distinct soft orange within. Very vigorous in growth; may be pruned like "Gloire de Dijon." Not very free-flowering, nor does it open its blooms very quickly in unfavourable weather; the few that fully develop are, however, of exceptional beauty.

Sultan of Zanzibar, H.P. (raised from "Duke of Edinburgh" by Paul & Son, 1876). Large, full, globular; deep chestnut-brown red, edged with scarlet. Strong-growing, smooth-wooded.

Sunset, T.R. (sport from "Perle des Jardins," Henderson, 1884). Large, full, saffron-orange, similar to "M^{me}. Falcot," but rather darker in colour.

Suzanne Marie Rodocanachi, *H.P. (raised by Lévêque, 1883). Flowers very large, full, perfectly globular, very distinct, bright rose colour; vigorous and free.

Thalia, *Cl. R.* (raised from "*Polyantha sarmentosa*" and "*Pâquerette*" by P. Lambert, 1896). Small, pure white, semi-double flowers in rich clusters.

The Bride, *T.R.* (sport from "Catherine Mermet," May 1887). Large, well-filled, cupped, creamy-white with a greenish-yellow high centre, the outer petals often tinted with pink. Growth moderately strong. A charming rose.

The Queen, *T.R.* (sport from "Souv. d'un Ami," Paul and Son, 1890). Large, full, opens well, pure white. Growth moderate, free-flowering.

Thomas Mills, *H.P. (raised by E. Verdier, 1873). Flowers large, fairly full, bright scarlet carmine; free.

Tom Wood, *H.P. (raised by A. Dickson & Sons, 1896). Flowers medium size, full, fine form, cherry red; free-flowering and good in autumn.

Tricolore de Flandre, *Striped R.* (raised by L. van Houtte, 1846). Medium size, full, white and crimson striped with lilac and amaranth-red. Growth moderate. Especially suitable as a bush rose for groups and beds.

Ulrich Brunner Fils, *H.P.* (raised from "Anna de Diesbach" by A. Levet, 1882). Large, full, cupped, bright cherry-red. Growth strong, free-flowering, stems slightly prickled.

Ulster, *H.P. (raised by A. Dickson & Sons, 1899). Flowers very large, fine form, bright salmon; vigorous growth. N.R.S. gold medal.

Van Houtte, *H.P.* (raised from "Général Jacqueminot" by Lacharme, 1870). Large, full, of beautiful centifolia form; blackish crimson-red, shaded with chestnut-brown. Strong-growing and free-flowering; good in autumn.

Victor Hugo, *H.P.* (raised by Lacharme, 1860). Large, very full, beautiful globular form, light centifolia pink, shaded with bright carmine; growth moderate, smooth-wooded, free-flowering.

Viscountess Folkestone, *Hyb. T.R.* (raised by Bennett, 1887). Very large, full, delicate pink, centre deep salmon-pink. Strong-growing, free-flowering.

***Waltham Pride**, (raised by W. Paul & Sons, 1905). A fine Wichuraiana Rose, with clusters of pure white flowers.

***White Lady**, *H.T.* (raised by Paul & Son, 1890). Flowers very large, creamy white; vigorous.

White Maman Cochet, *T.R.* (raised by Cook, 1898). Very similar in form and characteristics to the flesh-coloured "Maman Cochet" from which it was raised; but has white flowers shaded with creamy white. The half-open buds are particularly lovely.

***Wichuraiana**, a Japanese Rose, with vigorous trailing shoots and white flowers. It is being largely used for purposes of hybridisation, and many fine roses (*e.g.* "Dorothy Perkins," "Lady Gray," "Jersey Beauty," &c.), have been raised from it.

William Allen Richardson, *N.R.* (raised by Vve. Ducher, 1878). Medium size, fairly well filled, fiery orange-yellow, usually white at the edges. Very strong-growing and free-flowering, continuing into the autumn. Exquisite when half-expanded, but flatter and rather irregular with age. See coloured plate, 13.

William Francis Bennett, *Hyb. T.R.* (raised by Bennett, 1886). Large, loosely filled, glossy carmine-red, becoming violet with age; flowers continuously. Highly prized as a good forcing rose, but not much favoured as a standard, as it is not full enough.

Xavier Olibo, *H.P.* (sport from "Général Jacqueminot," Lacharme, 1865). Large, well-filled, globular, velvety blackish amaranth shaded with fiery-red.

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